

MANUFACTURERS' RECORD

A WEEKLY SOUTHERN INDUSTRIAL
RAILROAD AND FINANCIAL NEWSPAPER.

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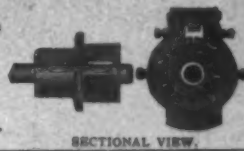
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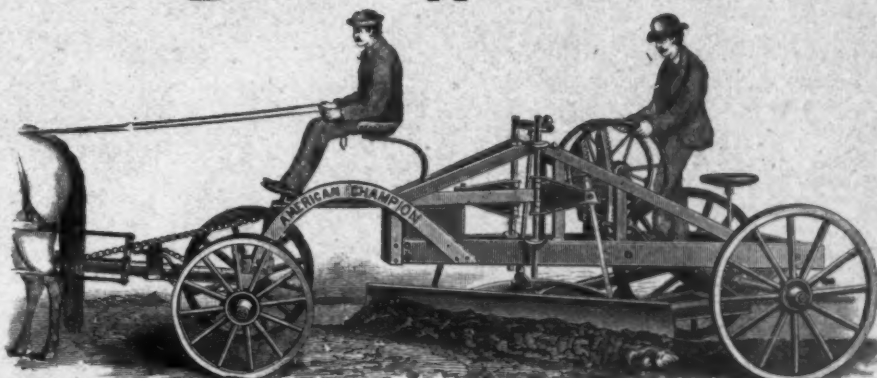
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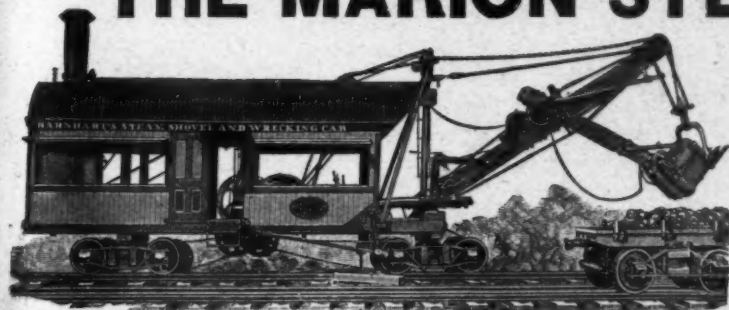
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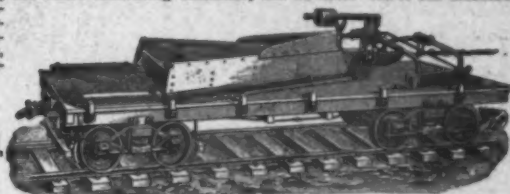


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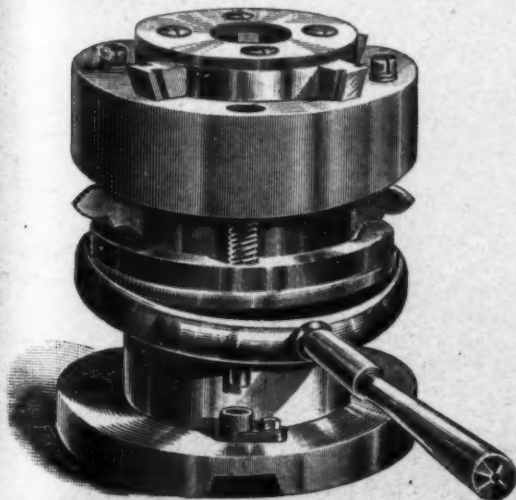
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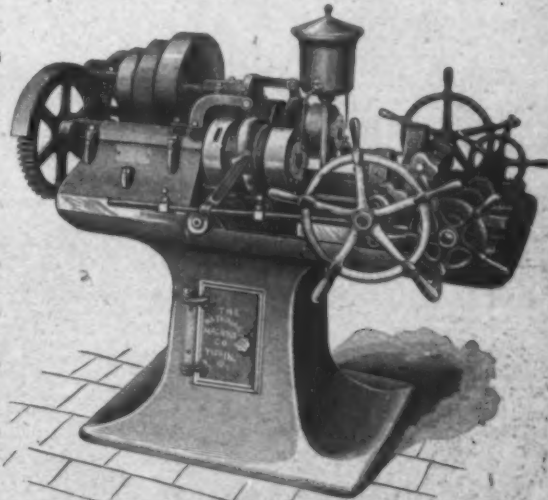
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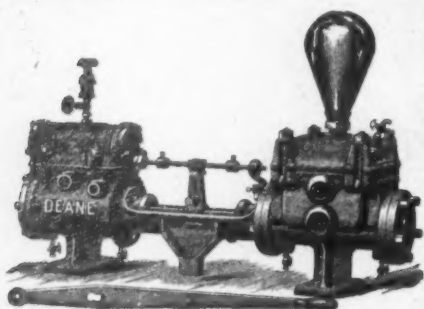


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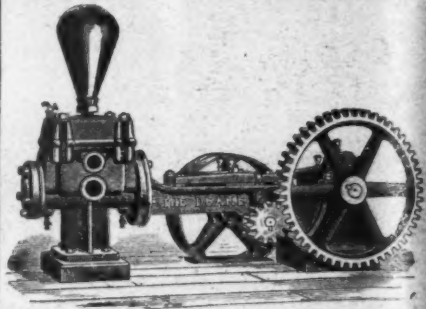


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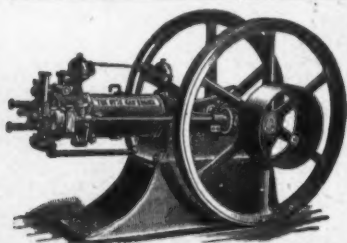
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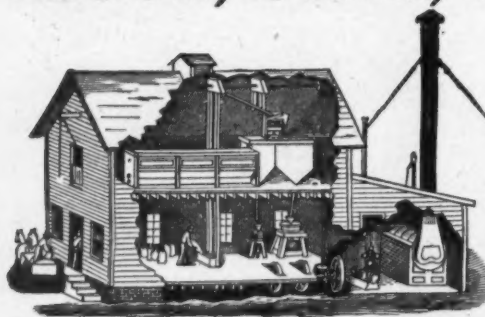
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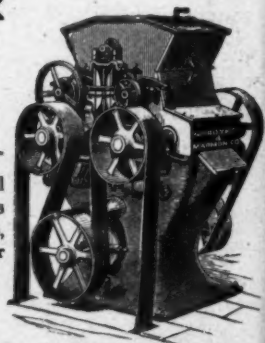
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MANUFACTURERS' RECORD

A Southern Industrial, Railroad and Financial Newspaper.

VOL. XX. No. 22.
WEEKLY.

BALTIMORE, JANUARY 2, 1892.

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BALTIMORE, JANUARY 2, 1892.

THE MANUFACTURERS' RECORD has stated that the matter of planting less cotton and raising more food-stuffs is in the hands of Southern business men. They can control it better than the planters. It is reported from Savannah that the factors and commission merchants of that city will require farmers to whom they make advances to reduce their cotton acreage. This should be done in every county in the South. A suggestion has been made by Mr. A. B. Shepperson, of New York, that the factors combine to require a reduction of 10 per cent. in acreage, and that this be put in corn. It would be well if a larger reduction should be demanded. The prosperity of Southern farmers rests with the business men who make advances. Will they rise to the occasion and by prompt and vigorous steps secure the planting of cotton and the diversification of Southern agriculture. Less cotton will not accomplish the desired results unless it is accompanied by an increase in the production of corn, wheat, oats, hogs, etc. The Southern farmer who diversifies his produc-

tions and makes cotton a surplus crop rarely fails, while the farmer who raises all cotton and buys his food-stuffs rarely succeeds.

Foreign Trade of the United States in 1891.

The foreign trade of the United States in 1891 exceeded that of any preceding year. The total value of the exports of merchandise for the eleven months ended November 30 was \$850,570,433, a gain of \$91,500,000 over the same time in 1889, of \$120,000,000 over 1888, and of \$244,000,000 over 1887.

The total value of imports for the eleven months ended November 30 was \$758,570,158, an increase of \$4,000,000 compared with the same time last year. Taking the five months of the fiscal year from July 1 to November 30, during which the movement of grain has been so heavy, the exports were \$431,185,982, an increase over the same months of 1890 of \$64,500,000, while the imports declined from \$351,400,000 to \$325,900,000, a decrease of \$25,500,000. For the five months under review the exports exceeded the imports by \$105,200,000, while in the same period of 1890 the excess was only \$15,000,000. Estimating the value of exports and imports for December at about the same as in November, the total exports for the year will be about \$960,000,000 and the imports \$822,000,000, or a grand total of foreign trade of say \$1,780,000,000—by far the largest in the history of the country.

The indications all point to equally as large a volume of foreign trade in 1892. Of course, predictions as to what the second half of 1892 will show would be absurd, because that will largely depend upon the crops at home and abroad, but an unusually heavy business for the next six months is already in sight. The engagements already made for grain shipments and the scarcity of food-stuffs in Europe, coupled with our abundant supply, make it certain that the volume of foreign trade will be very heavy until next summer at least.

Decrease in Freight Rates on Southern Railroads.

The fourth census bulletin on railway statistics, a synopsis of which has already been published by the MANUFACTURERS' RECORD, relates to the operations of railways in Virginia, West Virginia and North and South Carolina. The figures are not up to date, but only for the year 1889, the same period for which statistics were given in the three preceding bulletins.

The student of the statistics of these four groups, viz., the New England, the Middle, the Middle Western and the four Southern States named, will note the fact that while there has been in all a large decline in transportation rates since 1880, yet the average decline of the fourth group has been unexpectedly great. The average per ton per mile in the Southern group is 766 thousandths of a cent; in the Middle States it is 808 thousandths; in the Middle Western States it is 684 thousandths, and in New England it is 1,470 thousandths, or, taking the four groups in their order of freight paying, New England pays the highest rate, the Middle States stand second, the Southern group third and the Middle Western fourth. It was quite different in 1880, when the average for the Southern group was 40 per cent. higher than for the Middle States and more than 60 per cent. higher than for the Middle Western. In other words, there has been a decline in transportation rates in the Southern group since 1880 from an average of 1½ cents per ton per mile to an average of but a trifle more than three quarters of a cent in 1889, a drop of nearly 50 per cent. This is the largest reduction shown in the statistics of the four groups. It is probable that if these statistics were brought up to the close of 1891 the average reduction for the four Southern States would be even greater than given by the census, for in 1890 the average per ton per mile on the Norfolk & Western Railroad was but 571 thousandths of a cent, while the average on the Chesapeake &

Ohio for the year ending June 30, 1891, was but 525 thousandths of a cent.

During the nine years between the taking of the tenth and the eleventh census, the tonnage of the Southern group increased 248 per cent., and per mile at the rate of 338 per cent., while on the roads of the other groups the increase of the tonnage of the Middle Western States was only 103 per cent., and in tons per mile 87 per cent., while for the Middle States the percentages were respectively but 66 per cent. and 83 per cent.

Passenger traffic has increased and rates have been reduced on the railways of the four Southern States during the same period. In 1880 they carried 2,628,535 passengers; in 1889 nearly 9,500,000. In 1880 their average passenger rate per mile was 3.024 cents; in 1889 it was 2.207 cents, or but a fraction of a cent higher than in the other three groups.

While these statistics show that the railways traversing these four Southern States have voluntarily reduced freight and passenger rates during the past nine years to about the same standards that govern the other three groups, yet it ought to be stated to their credit that the railway managers have done this with the full knowledge that there was no immediate hope of earning the large sums per mile that the railways of the other three groups were certain to receive. Notwithstanding their large increase of both freight and passenger business, the railways of these four States earned in 1889 an average of but \$3,653 per mile, while the Middle Western roads earned \$6,821 per mile, and the roads in the Middle States (which include four great trunk lines) earned an average of \$14,402 per mile.

The MANUFACTURERS' RECORD commends the foregoing statistics, partly compiled by the Commercial and Financial Chronicle from the census bulletins, to those in the South who suppose that they can better its railroad service and secure lower charges by railroad

legislation, and to that other and apparently more numerous class of citizens who have been taught to believe that all tax burdens should be lifted from their shoulders and imposed upon the railroads, the manufacturers and the tradesmen. Most of the railroad companies in these four States have expended money liberally to secure immigration and capital for the territory they traversed; they have made permanent improvements that have cost millions of dollars; they have secured the establishment of industries by their liberality from which weekly flow thousands of dollars in wages which help to enrich the State. Their earnings have been small, but as fast as these would permit they have reduced their rates until they have been brought down to the level of systems that earn from 100 to 500 per cent. more a mile than they do, or can expect to do for many a year to come. There is such a thing as "killing the goose that laid the golden egg." Iowa had nearly accomplished that feat before she discovered her error, and has ever since been trying to remedy her fault. Texas has, through her railroad laws and commission, frightened railway capitalists from continuing her development. Let us hope that the two Virginias and the two Carolinas will have the wisdom to let well enough alone. All four States need more railways. Between the East and West and the North and South systems, existing and proposed, there will always be sufficient competition to keep rates within reasonable bounds and to secure good service. The motto of every Southern State should be encouragement to competition, the best railroad-rate regulator.

Large Importation of Egyptian Cotton.

A dispatch from New York of December 28 says: "The British steamer Southgate arrived here to-day from Alexandria, Egypt, with 4,900 bales of Egyptian cotton. This is the first large importation of Egyptian cotton. It is considered superior to the American cotton, and will be mixed with it."

The South can supply this high grade of cotton, and the Sea Island planters have wisely determined to ask Congress for protection to Southern long-staple cotton. They very naturally reason that if protection helps the tobacco grower as against foreign competition it will also help the cotton grower.

THE MANUFACTURERS' RECORD congratulates the Tradesman, of Chattanooga, upon its escape from the great fire of last Saturday. From the press dispatches, it had a close call, but the slight damage to the building will not probably even delay one issue.

BRADSTREET'S estimates the cotton crop at 8,400,000 bales.

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Railroad Statistics of the Central South.

The census has a bulletin giving statistics of the operations of railroads for the years 1880 and 1889 inclusive, for the States of Kentucky, Tennessee, Mississippi, Alabama, Georgia and Florida. A summary of the several items of interest contained in the bulletin is given as follows:

	1889.	1880.
Number of passengers carried.....	20,567,472	3,766,359
Tons of freight moved.....	38,189,735	10,986,274
Earnings from passenger service.....	\$20,244,232 84	\$ 8,780,853 96
Earnings from freight service.....	\$4,714,714 41	\$23,289,609 10
Total earnings and income.....	\$24,958,947 25	\$28,070,463 84
Total expenditures.....	\$29,526,909 88	\$30,809,777 84
Length in miles of all lines operated.....	16,532.50	8,273.88
Total number of employees.....	58,991	25,123
Number of cars in passenger service.....	2,009	944
Number of cars in freight service.....	61,657	18,187
Number of locomotives.....	2,369	1,112
Number of stations on all lines.....	2,778	1,021
Receipts per mile per passenger (cents).....	2.375	3.364
Receipts per mile per ton of freight (cts.).....	1.087	1.923

These figures show a very remarkable increase in the traffic, both freight and passenger, the percentage of gain being very much larger than the rate of increase of mileage. Comparing the aggregate business for the two years with the aggregate earnings, it is seen that there was a very decided decrease in the rates at which the traffic was handled.

Building Activity in Roanoke.

One year ago it was predicted that this would be a year of much building activity in Roanoke, and this has been verified, notwithstanding the financial stringency everywhere. The Roanoke Times of Sunday last published a detailed report of the buildings erected during 1891 at Roanoke, Salem and Vinton, three places that are so closely connected as to be properly considered together. The summary of this list shows a total of 681 buildings and a large number of new bridges, railroad and city improvements, etc., aggregating in cost \$3,362,823.

In these three places, whose aggregate population is scarcely 30,000, over \$3,300,000 spent in building operations and improvements during the year is a showing which very justly entitles them to do some boasting.

Panama vs. the Nicaraguan Canal.

The opposition to the Nicaragua canal bonds scheme has grown in strength during the recess of Congress, as the Panama canal men are wide awake and will fight for their interests. Money with them is scarce, but they have already made liberal concessions in land subsidies, and their lobby is a powerful one, pushing, energetic, but short of cash—a mortal sin here in Washington.—Washington dispatch to New York Journal of Finance.

If this report is correct it simply makes it all the more important that the United States should promptly aid the construction of the Nicaragua canal. There is some talk of holding a national convention in Pensacola to voice the sentiment of the whole country, and especially of the South, in favor of government aid to this canal.

ALABAMA'S IRON AND COAL TRADE.

What Was Accomplished During 1891.

Furnaces in a Better Financial Condition Than One Year Ago.

[Special Cor. MANUFACTURERS' RECORD.]

BIRMINGHAM, ALA., Dec. 26, 1891.

The year now closing has been a memorable one in the history of the iron production of Alabama. The average price for the year has been so low that the furnaces have been forced to adopt a much more careful and economical system of management and to pay closer attention to the details of the business.

The experience has been most valuable to them, having taught them their real advantages by a much more rapid process than any other. The test has been a crucial one, but having been the means of demonstrating the practical advantages of the district for the production of iron, it may be regarded as an unmixed blessing.

None of our furnace companies were in a strong financial condition at the beginning of the year, with one or two exceptions, but with scarcely an exception they have bettered their condition during 1891. One company is known to have made a net profit for the year of \$300,000—a better result than it has ever before been able to show.

Twenty-five out of twenty-seven furnaces are in operation; another will be in blast early next year, and the remaining one is idle because of litigation growing out of a disagreement among the stockholders, a small proportion of whom are not satisfied with the price at which the property was sold by the chief owner, who desired to retire from business.

Notwithstanding the large production, none of our furnaces have accumulated iron, the forced sales reported last week having relieved the only pressure to sell that has shown itself, and the furnaces are not anxious to make sales. The demand during the past week, while not so active as in the one preceding, has been larger than was anticipated, and the movement was free, quotations being fully maintained.

The demand for Alabama coal has been remarkably good in the past year, notwithstanding the large increase in production. Exact figures are not yet to hand, but conservative estimates put the output for the year at 5,700,000 tons. Between 500 and 600 new coke ovens have been built during the year and others are to be added. New markets are being opened in various parts of the South as our coals become better known. Alabama produces nearly every variety of coal—the best domestic coal mined in the United States being found here, and coking coal equal to the best is found within four miles of Birmingham.

Greater attention is being paid to the preparation of both coal and coke for market, and several extensive plants for washing coal are being erected at mines producing coking coal, while the mines producing domestic coal are equipped with the best screens and tipples that are made. Many operators have also adopted coal-cutting machines, by the use of which the coal is mined with less breakage and at a considerably reduced cost.

Much attention is being devoted to the acquisition of markets heretofore controlled by Pittsburg coal. For a long time it has been the opinion of many that it was impossible to ship coal from our mines by rail as cheaply as Pittsburg can deliver it by river, but it is now considered as proven that this is not the case. The only reason why there is not more coal sold by our mines in the markets now supplied by Pittsburg is that other markets, in which there is less competition, have so nearly

kept pace with the increased output as to make it unnecessary for our operators to fight for new markets—only one or two operators having made any special effort in that direction.

The Coal Trade Journal of this week states that coal can be boated from Pittsburg to New Orleans for 50 cents per ton, which is misleading; that may pay the boating charge, but does not pay for the package, which costs 70 to 75 cents per ton in addition to the towing from Pittsburg, nor the lock charges of 18 cents per ton. The Alabama mines reach Memphis, the first competing point for Pittsburg coal, at a cost of \$1 per ton, which is very profitable to the railroads.

The Alabama coal is delivered in the city by the railroads, while a further cost of 30 to 40 cents per ton is incurred in delivering Pittsburg coal from the barges. The same conditions apply to the trade at Greenville and Vicksburg, Miss.

The scarcity of Pittsburg coal in Southern markets, due to the low stage of the river during the past summer, gave considerable impetus to the movement of Alabama coals in that direction, and induced many people to give our coals a trial that were averse to experimenting with anything new. Having been tried and found superior to the Pittsburg product, Alabama coal is now taken in these markets in increasing quantities, and Pittsburg will never regain the monopoly so long enjoyed.

The movement has not yet been of sufficient magnitude to be felt by the Pittsburg operators, because other markets have left no surplus, in spite of a large increase in the output, but as the capacity of our mines is increased the shipments to this field will grow rapidly.

Though the present rate of production is greater than any one would have predicted two years ago, it seems probable that the development will be continued until this coal field supplies not only all the Southern cities, but the Gulf and South American ports.

HARDY & UNDERWOOD.

Tinplate Works in Virginia.

A prospectus has been issued by the Saverlake Steel & Tinplate Co., of Saverlake (P. O. Triford), Va., giving in detail a description of the various properties that have been acquired by this company, and particulars regarding the steel and tinplate works that are to be built at Saverlake. The president of the company is Mr. Titus S. Emery, of Philadelphia; the vice-president, Mr. Thomas Dunlap, Triford, Va. The list of officers and directors includes the names of a large number of prominent business men and capitalists. The MANUFACTURERS' RECORD is informed that this enterprise is absolutely assured, and that a contract has been made for the removal of large steel works now in operation to Saverlake, to which will be added the tinplate works. The most thorough investigations have apparently demonstrated the abundance of tin ore around Saverlake, and with a full supply of Bessemer ores near there, owned by this company, and cheap coke from West Virginia, there is a combination of resources and advantages that is probably not possessed by any other tinplate company in the world. The MANUFACTURERS' RECORD hopes to see an early commencement of active work upon this important enterprise.

THE SOUTH IN 1891.

A Year's Progress in Commerce, Industry and Agriculture.

A STEADY FORWARD MOVEMENT IN SPITE OF TREMENDOUS OBSTACLES.

Activity in Every Branch of Manufacturing and Mining.

The Greatest Cotton, Corn, Wheat and Sugar Crops Ever Raised.

A PERIOD OF NOTABLE ACHIEVEMENTS ALONG ALL LINES.

The year 1891 has been one of the most trying periods through which the financial, commercial, agricultural and industrial interests of this country have ever been called upon to pass. The great financial crisis resulting from the Baring collapse in November, 1890, overshadowed everything at the beginning of the year, and the last twelve months have been a striking illustration of the ability of this country to recover from a heavy blow to its financial and commercial interests. The great resources of this country have been fully equal to the emergency, and the advent of the year 1892 finds us in a prosperous condition, with all our industries in a state of great activity. Unlike the great panics of 1873 and 1884, the crisis of 1890 was due entirely to outside causes, and not to conditions created in this country. England, by ill-advised speculative ventures, precipitated the trouble, and in the emergency the United States was called upon to right matters. The necessities of the case caused a severe drain upon the financial resources of this country, but the equilibrium has been once more restored, with comparatively little injury to our financial and commercial interests.

The past year has been a period of slow recovery from the great blow, but the recovery has been steady, continuous and thorough, and the opening of another year brings prospects of the brightest character. Nature has come nobly to the aid of this country with bountiful crops of every kind, ample enough not only to meet all requirements of home consumption, but also to supply the deficiencies existing in other sections of the world. The last half of the year has been especially a period of activity and prosperity in nearly every line of business, and the growth of trade shows how fully and how rapidly the recovery has taken place.

Between the beginning and the end of the past year there have been trying periods in every section of the country. Speculative ventures of many kinds have collapsed, business enterprises without sufficient capital have been forced to suspend and unsound banks have been toppled over. All of this has had a beneficial effect upon the country at large, and business interests are to-day in a more healthy condition than they were 12 months ago. There has been a general clearing of the business atmosphere, and sound concerns can now breathe more freely.

It has been especially interesting to note the manner and locations in which the reaction from the crisis of a year ago has manifested itself, and here again the South has cause for satisfaction. There have been many large failures in business during the past year, and the aggregate of liabilities has been unusually heavy, but the disastrous failures have been confined almost exclusively to the older financial centers of the North. The reactionary influences were severely felt in some parts of the West, where there had been widespread collapse of speculative ventures, but fortunately the enormous grain crops have again brought prosperity to that section. The failures in the South have been limited mainly to a comparatively few small concerns of insecure footing and limited means. None of the more important interests in the South have met with disaster, and we believe that any well-informed and unprejudiced observer will admit that the South has stood the strain of the past year in a phenomenal manner. In view of the great proportion of new

establishments in the South it would not have been surprising if many of them had collapsed under the pressure that has overthrown so many large and long-established firms in other sections of the country, and the fact that such has not been the case is the best possible evidence of the stability of the South.

The South has not only held its own against tremendous odds in 1891, but it has made a record of substantial progress which, in many respects, has never been equalled in the most prosperous years. Nature has been especially generous to the South. The cotton crop of 1890 was surpassed all records, and that of 1891-92 will not fall far short. There has been an enormous increase in the yield of wheat and corn, the sugar crop has distanced previous records and the minor crops have been bountiful beyond all expectation. The South has given more liberally of its products to the world than in former years, as indicated by the great activity at the seaports. In the development of mineral resources and the establishment of dependent industries there has been great progress, and it is gratifying to note that what has been done in the past year has been done well, and with a view to permanence and profit. There has been less of the speculative spirit and more of sound business principles than ever before, and what has been done in the establishment of new industries in the past year will tell powerfully in the future of the South. The year 1891 has not been a period of uninterrupted prosperity for any section of the country, but it has resulted in immeasurable benefit to the South. During 1891 the South completed 28 blast furnaces, 10 rolling mills, 1 Bessemer steel rail mill in Maryland and 1 Bessemer plant in Kentucky, and nearly finished 2 cotton-tie mills and 1 tinplate mill, and is about ready to commence building another tinplate and steel mill. Its production of pig iron was 1,900,000 tons, and of coal 23,000,000 tons. The assessed value of property increased to \$4,800,000,000, a gain of \$320,000,000 over 1890, and of \$1,900,000,000 over 1880. The corn crop was the largest ever produced, being about 568,000,000 bushels, a gain of 117,000,000 bushels over 1890, while the gain in wheat was 16,000,000 bushels. The foreign trade of 1891 was the largest the South ever had, the total value of the exports for the 11 months ended November 30 having been \$296,500,000, an increase of \$28,000,000 over the corresponding time of 1890. The imports at Southern ports for the same period showed an increase of \$9,000,000, although the total imports for the whole country declined about \$4,000,000, or a net decline outside of the South of \$13,000,000. In November the exports from the entire country were valued at \$110,000,000, and of this amount nearly one-half, or \$53,300,000, was from Southern ports.

There is no better evidence of the solid, substantial progress of the South in 1891 than is presented in the more detailed account of progress presented in the articles following:

ASSESSED VALUE OF PROPERTY.

A Great Increase in 1891 Over 1890.

Despite the financial troubles of 1891 and the consequent depression throughout the world, the increase in the assessed value of property in the South was greater than in any preceding year since the war. The gain in 1890 over 1889 was \$270,000,000, the largest increase in any one year up to that time, but the gain in 1891 over 1890 was \$320,000,000. Every State shows a large gain, Texas leading with \$72,000,000. The increase in Maryland was \$33,000,000, Virginia about \$40,000,000, North Carolina \$30,000,000, South Carolina \$18,000,000, Georgia \$30,000,000, Florida \$4,000,000, Alabama \$13,000,000, Mississippi \$5,000,000, Louisiana \$1,000,000, Arkansas \$8,000,000, Tennessee \$13,000,000, West Virginia \$3,000,000, Kentucky \$48,000,000. The actual increase in some of the States was much larger than these figures indicate, as assessments of real estate in some of them are only made every five or ten years. This is the case in West Virginia, where no new assessment of real estate has been made for, we believe, nearly ten years. In 1880 the total assessed value of property in the South was \$2,913,000,000, and in 1891 \$4,816,000,000, an increase of \$1,900,000,000. The official figures from each State show the following valuations:

	1880.	1889.	1890.	1891.
Alabama.....	\$459,187,468	\$477,398,380	\$477,398,380	\$519,608,077
Arkansas.....	391,997,513	344,169,473	344,169,473	446,535,438
California.....	109,916,007	217,000,000	227,769,856	257,053,376
Florida.....	129,511,624	145,380,343	150,400,000	186,343,679
Georgia.....	351,484,651	380,289,314	415,603,278	445,047,950
Illinois.....	31,137,840	93,800,000	93,800,000	107,000,000
Indiana.....	139,077,328	248,197,531	258,979,375	271,853,321
Iowa.....	115,130,551	137,330,411	168,983,463	167,048,358
Kansas.....	177,096,459	226,397,288	234,350,791	235,700,000
Kentucky.....	311,470,736	710,000,000	783,111,883	854,603,756
Louisiana.....	91,191,653	166,000,000	173,336,506	1780,000,000
Massachusetts.....	211,768,438	325,118,636	347,508,005	360,570,462
Michigan.....	146,991,740	183,013,737	187,165,335	190,312,617
Minnesota.....	273,473,041	551,676,267	584,069,446	632,346,932
Total.....	\$2,913,436,095	\$4,200,166,040	\$4,493,546,536	\$4,816,395,626

*1888. †Partly estimated.

IMPORTS AND EXPORTS.

The Growth of a Year in the Foreign Trade of the South.

The exports of 24 Southern ports for the 11 months ended November 30, 1891, aggregated \$296,557,510, as compared with \$268,293,243 for the corresponding period of 1890, showing an increase of \$28,188,649 in 1891. The exports for the entire country for 11 months of 1891 aggregated \$350,570,433, as compared with \$759,050,796 in 1890, an increase of \$91,519,637. The enormous cotton crop of the last season has been a leading factor in the large increase of exports, the exports for the season ended September 1, 1891, being 5,847,191 bales, as compared with 4,955,931 bales during the same period of 1890. The largest gains were at the following four ports:

Ports.	Exports 1891.	Exports 1890.	Increase.
New Orleans.....	\$96,492,161	\$97,354,939	\$9,038,284
Charleston.....	18,714,948	12,794,144	5,920,804
Galveston.....	39,324,753	23,594,390	15,730,363
Newport News.....	12,408,588	7,010,658	5,397,930

While the cotton crop has been an important element in the larger foreign trade of the South, a new and important factor has appeared during the past year in the movement of a large quantity of grain to Southern ports, the abundant crops of the past season throughout the country having brought the grain trade of the Southern ports into greater prominence than ever before. In addition to the grains grown on Southern soil there has been a considerable movement of Western crops to Southern and Southwestern ports for export. The Norfolk & Western Railroad, which has never before figured as a grain carrier, has had a large traffic in cereals during the past few months, and the Chesapeake & Ohio has carried a large amount of this freight. The situation at Newport News at the opening of December furnishes a good illustration of the manner in which the grain trade has grown with the Southern railroads. In one week seven steamers carried out 245,813 bushels of wheat and 313,000 bushels of oats. There were 900,000 bushels of wheat in the elevator awaiting shipment, 120,000 bushels in cars on the tracks awaiting unloading and 600,000 bushels in transit by rail for shipment from Newport News. The superintendent of the Newport News elevator reports that "the receipts of grain there up to December 24 were 5,179,000 bushels. Of corn there were 500,000 bushels; wheat, 2,840,000, and of oats, 1,839,000. There are now 1,000 loaded cars on the line and several thousand more for business in sight. The outlook for next year is all that we can ask. We expect the increase to be 50 per cent. over the business of the year." Baltimore has, of course, long figured as one of the leading grain-shipping ports, and therefore does not call for consideration in this connection. Galveston is coming to the front in this respect, and there is promise of an enormous grain export trade from that port. Within the past month work has been commenced upon a grain elevator with a capacity of 1,000,000 bushels at Galveston to accommodate the growing trade of that port. With proper facilities it is probable that Galveston will secure a large amount of Western grain for export, besides the surplus of Texas grain. New Orleans has done a very heavy grain business, the exports of wheat for the five months ended November 30 having been 7,459,759, against 304,202 bushels for the corresponding time of the preceding year.

The exports of coal from Southern ports have been larger than usual during the past year, and the extension of trade in this direction is dealt with more fully under our review of the coal industry for the year.

The exports from Southern ports during November were the largest ever made in one month, aggregating in value \$53,345,729, the total for the entire country being \$110,100,220. Thus, notwithstanding the extraordinarily active foreign trade from Northern and Pacific coast ports, nearly one-half of the total exports from the United States in November was from the South. The following table shows the exports from Southern ports for November:

Baltimore.....	\$7,707,458
Beaufort, S. C.....	50,100
Brazos, Texas.....	16,615
Brunswick, Ga.....	909,868
Charleston.....	5,268,566
Corpus Christi.....	289,525
Fernandina.....	49,885
Galveston.....	7,751,872
Key West.....	56,979
Mobile.....	470,247
New Orleans.....	14,043,548
Newport News.....	1,443,584
Norfolk and Portsmouth.....	3,441,725
Pearl River, Miss.....	45,336
Pensacola.....	93,553
Richmond.....	1,566,600
Salina.....	311,876
Savannah.....	7,852,087
Wilmington.....	1,317,086

Total..... \$53,345,729

The total value of imports and exports at Southern

ports for the 11 months ended November 30, 1891, as compared with the same time 1890, was as follows:

Customs districts.	Total for 11 mos. ended November 30, 1891.		Total for 11 mos. ended November 30, 1890.	
	Imports.	Exports.	Imports.	Exports.
Baltimore, Md.	\$17,294,973	\$70,532,147	\$13,896,639	\$65,137,915
Beaufort, S. C.	41,901	613,152	42,844	1,068,445
Brazos, Texas.	143,957	557,966	267,608	641,608
Brunswick, Ga.	4,734	5,010,002	4,038	6,304,618
Charleston, S. C.	1,081,030	18,714,948	707,849	12,794,144
Corpus Christi, Tex.	2,423,995	3,865,120	2,393,591	2,901,669
Fernandina, Fla.	792,997	711	307,844	
Galveston, Texas.	674,869	29,324,753	421,741	23,394,393
Georgetown, D. C.	250,158		224,807	
Key West, Fla.	723,071	418,835	1,512,056	427,387
Louisville, Ky.	520,485		466,798	
Mobile, Ala.	62,786	2,137,548	93,217	2,970,570
New Orleans, La.	19,980,318	96,403,163	14,329,120	87,384,939
Newport News, Va.	45,741	12,402,588	76,240	7,010,658
Norfolk and Portsmouth, Va.	38,717	12,552,399	85,481	12,922,313
Paso del Norte, Tex.	5,899,565	13,766	4,810,014	73,037
Pearl River, Miss.	4,523	932,273	983	958,411
Pensacola, Fla.	117,290	2,620,509	81,714	3,794,744
Richmond, Va.	20,200	6,321,177	66,261	6,518,056
Saluria, Texas.	895,373	2,652,898	1,475,079	2,077,846
Savannah, Ga.	409,539	24,700,828	357,199	24,931,179
Tampa, Fla.	368,530	235,376	473,932	
Teche, La.	210,221	731	875,176	2,581
Wilmington, N. C.	179,313	5,754,511	126,171	7,419,987
Totals.	\$51,411,710	\$296,557,510	\$42,798,581	\$268,376,489

IRON TRADE OF THE SOUTH IN 1891

A Year of Great Activity and Marked Progress in New Work.

The past year has been a very trying period for the iron and steel industries of the entire country. During the first six months there was a marked reaction from the tremendous activity and unprecedented production of 1890. In January a general curtailment of the production of pig iron began, and until May there was a steady decline in the output. Nearly all of the furnaces in the Shenandoah valley of Pennsylvania and the Mahoning valley of Ohio, two of the largest and strongest producing regions in the country, were idle throughout the first six months of the year, and a large number of furnaces in other sections of the country were also out of blast during that period. The lowest point in the production was reached in April, the capacity of the stacks in blast on the first day of that month being smaller than at any time in many years. The following table of the number of stacks in blast and their aggregate weekly capacity in gross tons, as given by the Iron Age, will indicate the extent to which production declined and advanced during the past twelve months:

1891.	Stacks in blast.	Capacity per week, gross tons.
January 1	302	167,599
February 1	294	146,050
March 1	257	134,526
April 1	228	113,483
May 1	227	115,590
June 1	258	146,782
July 1	293	171,115
August 1	296	169,576
September 1	299	170,846
October 1	306	181,615
November 1	304	187,685
December 1	298	188,135

As against a production of 5,199,253 net tons of pig iron in the last half of 1890, the output during the first six months of 1891 was only 3,776,556 net tons, showing a decline of 1,422,697 net tons, or 27 per cent., in the brief space of six months. Such a tremendous reaction is unprecedented in the history of the iron industry of this country. The only occasion approaching it was the reaction that followed the great panic of 1873, but the decline in the iron output for an entire year at that time amounted only to 26 per cent. The South suffered less than other sections of the country in the reaction of the first half of 1891, the decline in the output of pig iron, as compared with the last half of 1890, being 213,173 net tons, or 21 per cent.

The last six months of 1891 have shown an increase in production even more marked than the decline of the first six months. There has been great activity throughout the country, and production has increased at a rapid pace until within the past month the highest point ever reached has been attained, the number of active stacks on December 1 being 298, with an aggregate weekly capacity of 188,135 gross tons. This indicates that the aggregate production for the entire country during 1891 will be not far from 9,000,000 net tons, or about 10 per cent. less than the output in 1890.

There have been numerous failures in the iron trade during the past year, as might naturally be expected under such trying circumstances. There have been several heavy failures among Northern manufacturers, but the number of Southern concerns affected has been small, consisting chiefly of new enterprises not actually in operation. The scarcity of money, the lack of public confidence and the restriction of credit, which have been universal throughout the country, have seriously embarrassed several enterprises, but the effect upon the Southern iron industry at large has been inappreciable. This point is brought out in our Birmingham letter, in which attention is called to the fact that the low prices have brought about economies in production to such an extent

that almost without exception the furnaces in that district are in a stronger condition financially than they were a year ago. Notwithstanding these conditions of disadvantage there has been great activity in the construction of new iron plants in the South during the year, particularly in Virginia. We have record of no less than 28 blast furnaces that have been completed in the South in 1891, and 10 rolling mills and steel works that have been completed or nearly so. These enterprises are considered at greater length below.

PRODUCTION OF PIG IRON.

By the courtesy of the manufacturers of pig iron in the South, from nearly every one of whom we have received reply, we are able to present very closely the production of pig iron during the year. We have prepared the following tables, using the net ton. The figures prior to June, 1891, are those of the American Iron & Steel Association:

States.	1891.		Total.
	First half.	Second half.	
Maryland	49,992	87,201	137,193
Virginia	141,908	186,271	328,179
North Carolina	1,003	1,873	2,876
Georgia	24,401	39,781	64,182
Alabama	379,121	486,580	865,701
Texas	8,465	8,660	17,125
West Virginia	18,777	81,923	100,700
Kentucky	18,779	27,813	46,592
Tennessee	142,010	196,181	338,191
Total	766,636	1,125,383	1,912,039

States.	1890.		Total.
	First half.	Second half.	
Maryland	72,632	92,927	165,559
Virginia	167,052	169,860	336,912
North Carolina	1,401	1,780	3,181
Georgia	10,599	22,188	32,787
Alabama	463,451	451,650	915,101
Texas	8,517	8,948	17,465
West Virginia	63,629	81,311	144,940
Kentucky	25,546	28,058	53,604
Tennessee	143,493	156,218	299,711
Total	933,630	999,829	1,953,459

MARYLAND.

The most important event in the iron industry of Maryland during the past year was the completion of the blast furnaces and steel works departments of the immense plant which the Maryland Steel Co. has been building at Sparrow's Point, near Baltimore. The first of the four blast furnaces was lighted in November, 1889, and the second followed in 1890. The third was put in blast a few months ago, but the fourth has not yet been started up, although it has been completed for some months. These stacks are each 85 feet high by 22 feet bosh, and the entire plant is one of the best examples of modern blast furnace engineering that can be found in this country or abroad. With the rich Cuban ores, which are landed directly at the furnace plant from the steamers, they are reckoned to be able to do about 90,000 tons of pig iron each year. The construction of this plant has opened a new market for West Virginia coke, which is now coming to Sparrow's Point in large quantities over the West Virginia Central and Baltimore & Ohio Railroads.

The Bessemer steel plant and rail mill of the Maryland Steel Co. has been completed and put in operation during the year, the first blow in the steel mill having taken place on August 1. Since that time the Bessemer plant and rail mill have been running steadily, the bulk of the rail business of the Pennsylvania Steel Co. having been transferred to this mill from Steelton. The new Sparrow's Point mills are of enormous capacity, constructed and equipped in accordance with the most advanced ideas, and thus far their operation has been in every respect satisfactory. Rails can be rolled in lengths of six, and it is anticipated that these works will be able to surpass the best record of the Edgar Thompson works whenever they shall be put to the trial of their capacity. The shipbuilding plant and other departments have been so far advanced towards completion that they are now able to handle considerable new work. The name Maryland Steel Co., with an organization separate from the Pennsylvania Steel Co., was adopted during the past year, and Mr. F. W. Wood was chosen president. Since the completion of the furnaces the lease of the stacks at Ashland, owned by the Ashland Iron Co., has been given up. These furnaces are now idle and the Ashland Iron Co. is in liquidation.

Another important move has taken place in the iron industry of Maryland in the past year in the establishment of a tinplate plant at the Locust Point Iron and Steel Works of Coates & Co., in Baltimore. This firm has been operating a rolling mill at Locust Point for many years, and a few months ago work was commenced on a plant for tinning sheets. When the plant is in operation it is expected to have capacity for turning out 1,800 boxes of 14x20 plates per week.

There is prospect of a resumption of operations at the works of the old Crown & Cumberland Steel Co., at Cumberland, a new company having lately been chartered with a capital of \$150,000. It is proposed to improve the

plant and put it in operation once more. The Baltimore & Ohio rolling mill at Cumberland is still under lease to the Cambria Iron Co., of Johnstown, Pa.

VIRGINIA.

The greatest activity in the construction of new iron-making plants in the South during 1891 has been in Virginia. The year has been essentially one of fulfillment rather than promise, and while there are few projects under consideration at the close of the year, not less than a dozen stacks have either been completed or are nearly finished at this time. The completion of these furnaces means much to Virginia, for they will add close upon 400,000 tons to the producing capacity of the State, and they are all owned by sound companies intent upon business. Conspicuous among the new furnaces are the four large stacks built by companies of Philadelphia capitalists interested in the Norfolk & Western Railroad. One of these, the Buena Vista, was built in 1890; the Graham and Max Meadows have been completed within a few weeks, and the Salem was finished and blown in several months ago. The Bristol furnace, also owned by Philadelphia parties, was completed and lighted in October, but an accident to the machinery compelled a brief suspension of work. The Radford-Crane Iron Co., another Pennsylvania concern, has a large coke stack nearly completed at Radford, and the two furnaces of the Appalachian Steel & Iron Co. at Big Stone Gap are well on towards completion. The Pulaski Development Co. has built a large furnace at Pulaski, which will probably be at work in a few weeks, and a rolling mill is in course of construction at the same place. The Alleghany Iron Co. is building a stack at Iron Gate, and another furnace is being put up at Copwington by Ohio parties. At Radford a large pipe foundry, with a daily capacity of about 150 tons, has recently been completed by the Radford Pipe & Foundry Co., which also operates the Anniston Pipe Works at Anniston, Ala. The rolling mill at Iron Gate, which was built in 1890, was purchased early in the year by the Richmond Standard Spike & Iron Co., and has been greatly enlarged and improved.

The Crescent Horseshoe & Iron Co. is building a rolling mill at Max Meadows, and the Salem Rolling Mills Co. is erecting a mill at Salem. The Buena Vista Steel Co. has the foundation in for an extensive open-hearth steel plant at Buena Vista, and a fine merchant mill has been built during the year by the Shenandoah Iron Co. at Shenandoah.

The Liberty Iron Co., a Philadelphia company, which purchased the old Columbia and Liberty furnaces in Shenandoah county, wrecked both of the old stacks and has built a fine charcoal stack on the site of the old Liberty furnace, the new furnace being lighted early in 1891.

The Richlands Iron Co., a Philadelphia corporation composed of capitalists identified with Norfolk & Western interests, has recently completed a rolling mill at Richlands, on the Clinch Valley extension of the Norfolk & Western Railroad. The mill is well equipped and is intended for the production of muck bar at present. The Roanoke Iron Co. has put in operation a new mill during the year, and another mill has been built at Glasgow.

WEST VIRGINIA.

There have been few changes in the iron industry of West Virginia during the past year. No new furnaces or mills have been built, but many of the existing plants have made extensive improvements. The furnace of the Belmont Nail Co., of Wheeling, has been entirely rebuilt and raised from 60 to 70 feet in height.

KENTUCKY.

During the year the two large coke stacks of the Watts Steel & Iron Syndicate, Limited, at Middlesborough, have been completed, and are now ready for operation, although not yet blown in. The open-hearth steel plant of the same company is well on towards completion, but the financial embarrassment of Mr. J. P. Witherow, of Pittsburg, the contractor, caused a temporary suspension of construction. Mr. Witherow's affairs having been adjusted, the work will probably be resumed and the plant completed at an early date. The charcoal stack of the Cumberland Gap Iron Co., which was started over a year ago, has not yet been finished. The Grand Rivers Co., a New England concern, has built an extensive plant of two large charcoal stacks at Grand Rivers, which are about ready for operation. The Licking furnace, at Newport, which was idle for a long time, has been purchased by the Newport Rolling Mill Co., of Cincinnati, Ohio, by which it is now being operated. This company is also the owner of the old Newport Iron & Steel Co.'s works, which have been remodeled and improved for the manufacture of light sheets and plates.

One of the most important additions to the iron and steel industries of Kentucky is the extensive Bessemer steel plant of the Ashland Steel Co., at Ashland. The

plant has a capacity of about 400 tons per day, and is owned jointly by the Norton Iron Works, of Ashland, and the Kelly Iron & Nail Co., and the Belfont Iron Works Co., of Ironton. The plant was completed several months ago, and is intended primarily to supply nail slabs for the three companies, the surplus product to be sold.

TENNESSEE.

There has been considerable activity in furnace-building in Tennessee during the year, several new stacks having been added to the list. The furnace of the Carnegie Iron Co., at Johnson City, which was commenced in 1890, has been completed and is now ready for work. The Embreeville Freehold Land, Iron & Railway Co., Limited, an English company, has built a large coke stack at Embreeville, which is now practically ready for blast, and a furnace is now being built by the Gracey-Woodward Iron Co. at Clarksville. The Napier Iron Works, at Napier, has completed a fine stack of large capacity, which will be run on high-grade charcoal iron, using local brown hematite ore. The new Rockdale furnace, at Rockdale, which was built as a charcoal stack in 1890, was leased early in the year to a new company styled the King Furnace Co., composed of Nashville and Dayton (Ohio) parties, and has been changed to coke. The Suwanee furnace of the Tennessee Coal, Iron & Railroad Co., at Cowan, has undergone extensive alterations during the year, and has been enlarged from 65x15 feet to 75x16 feet. Since the Cardiff Coal & Iron Co. went into the hands of a receiver, work has been suspended on the furnace that was started in 1890 at Cardiff.

NORTH CAROLINA.

The North Carolina Steel & Iron Co. laid the cornerstone of a large coke stack at Greensboro on November 5. This is the first furnace built in the State for coke, although the Cranberry furnace has alternated between coke and charcoal. The new plant will be of modern construction, and its erection is an event of considerable significance. Local ores and Pocahontas coke will be used, and the product is intended to be Bessemer pig iron.

GEORGIA.

The charcoal stack of the Rome Iron Co., at Rome, which was commenced in 1890, was completed last spring and blown in on May 6. The Tallapoosa charcoal furnace has been remodelled and extensively repaired during the year, and was put in blast again on July 1.

TEXAS.

The developments in Texas during the year have been of great significance and have brought that State forward prominently into the ranks of the iron-producing States. The charcoal stack of the Lone Star Iron Co. at Jefferson, which was begun in 1890, was completed and blown in early in the spring. This company is now building a rolling mill and a cotton-tie mill. The Star and Crescent furnace, of the Cherokee Iron Manufacturing Co., at New Birmingham, has been completed during the year and was blown in on November 26. A railroad outlet from the Llano county iron ore fields has been assured by the commencement of work on an extension of the Austin & Northwestern Railroad from near Burnet to Llano, and the Llano Improvement & Furnace Co. has, it is reported, but not yet confirmed, let contracts for the construction of a 150-ton stack. The mill of the Fort Worth Rolling Mill Co. was completed early in the year, a mill is going up at Denison, and in connection with it a cotton-tie mill and several similar projects are now under consideration in different parts of the State. Altogether there has been a very active interest in iron matters in Texas during the year, and there is promise of a number of new and important enterprises based upon the rich mineral resources to which attention has been directed of late.

ALABAMA.

There have been some changes in the old companies in Alabama, but very little has been done in the way of new work, and the industry remains about as it was a year ago. The Philadelphia furnace of the Florence Cotton & Iron Co., at Florence, has been completed, and will, it is said, go in blast in a few days. The Bay State furnace, at Fort Payne, and the Piedmont furnace, at Piedmont, are still unfinished, work having been suspended early in the year. The extensive iron ore and furnace properties of the late Col. Enoch Ensley, of Sheffield, were consolidated early in the year in a new company called the Lady Ensley Coal, Iron & Railroad Co., and the Trussville furnace of the Birmingham Furnace & Manufacturing Co. changed owners during the year, the new company being styled the Trussville Furnace & Mining Co. There are several projects for new furnaces now under consideration, but we cannot speak definitely of them.

The plant of the Alabama Rolling Mill Co., of Birmingham, was partially destroyed by fire in June, but has since been rebuilt and enlarged. There has been considerable talk of establishing a large steel plant at

Ensley, and a large amount of money has been subscribed for this purpose, but the matter has not yet assumed definite shape, although there is promise of a large mill as the outcome of the agitation.

The Bessemer Rolling Mills, at Bessemer, were sold to Birmingham and Natchez parties in November, and will probably be put in operation after extensive alterations and enlargement. The Anniston Rolling Mill, which was begun late in 1890, has been completed during the year.

COAL MINING IN 1891.

Some Interesting Facts About One of the Greatest Southern Industries.

The most reliable data we have been able to gather shows a product of about 21,570,000 gross tons during 1891 in Maryland, Virginia, West Virginia, Kentucky, Tennessee and Alabama, which we divide as follows, crediting to Virginia the output of the Pocahontas region in accordance with the usual custom, although a large proportion of this production properly belongs to West Virginia:

	Gross tons.
Maryland.....	3,355,000
Virginia.....	3,600,000
West Virginia.....	6,153,000
Kentucky.....	2,850,000
Tennessee.....	2,573,000
Alabama.....	14,000,000

Total..... 21,570,000
Other Southern States—estimated..... 1,500,000

This estimate of 4,000,000 tons in Alabama is made by Prof. Wm. B. Phillips, but Messrs. Hardy & Underwood, of Birmingham, report that it is entirely too low. An official of the Louisville & Nashville Railroad estimates the output at 5,700,000 tons, which they consider reliable.

In few instances are there complete official figures of production for any periods later than June, 1891, but we believe the statistics we have gathered closely approximate the actual output of coal in the States named. For purposes of comparison there are no authentic figures later than those prepared by John H. Jones for the eleventh census, covering the calendar year 1889. The census credits these States with an output of 17,747,309 short tons, or 15,840,454 gross tons, for 1889, distributed as follows:

	Gross tons.
Maryland.....	2,624,745
Virginia.....	773,025
West Virginia.....	5,594,178
Kentucky.....	2,142,538
Tennessee.....	1,719,365
Alabama.....	3,018,593

Total..... 15,840,454

A comparison of the census figures for 1889 and those we have gathered for 1891 shows an increase for the six States amounting to 5,457,546 gross tons. Such official figures as we have been able to obtain, together with notes of the year's progress in the different States, are given below.

VIRGINIA.

The shipments of Pocahontas coal from Lambert's Point, Norfolk, by years, were as follows:

Year.	Shipped foreign Tons.	Shipped coastwise. Tons.	To stems. Tons.	To ocean Tons.	Local Tons.	Total Tons.
1886.....	15,981	409,089	22,158	.....	57,923	574,151
1887.....	14,779	532,596	37,982	.....	36,161	661,522
1888.....	35,471	742,950	42,051	3,306	62,981	883,759
1889.....	23,923	826,278	70,015	7,203	78,686	1,013,214
1890.....	37,743	926,451	102,758	14,567	71,010	1,152,597
1891.....	25,726	1,145,395	130,748	17,959	67,728	1,407,556

Total..... 1,304,145 4,617,863 404,709 43,236 40,649 5,622,713
December, 1891, estimated.

The number of vessels on which this coal was shipped, and the number of steamers that took on bunker coal for steam, is shown by the following statement:

Year.	Stems. bunker coal.	Stems. cargo & steam bunker.	Total stems.	Ships, tugs & barges.	Schoon- ers & brig. barges.	Total vessels.
1886.....	84	1	85	23	54	62
1887.....	157	1	158	28	74	92
1888.....	146	13	159	20	761	1,666
1889.....	228	29	257	9	506	1,147
1890.....	354	30	384	3	542	1,439
1891.....	461	31	492	..	511	1,630

Total..... 1,430 164 1,534 93 1,622 3,641 6,890
The shipments from the Pocahontas field, as far as made up to this date, indicate an output from that region of close upon 2,250,000 tons for the entire year 1891, as compared with 1,798,721 tons for 1890. The details of production up to December 1, 1891, and the full figures for previous years are given below:

Companies.	1888.	1889.	1890.	1891.*
S. W. Virginia Improvement Co.	725,333	184,409	512,791	508,854
John Cooper & Co.	180,971	184,071	193,313	142,378
Caswell Creek Coal & Coke Co.	162,085	154,321	169,789	187,494
Booth-Bowen Coal & Coke Co.	137,554	128,450	129,026	140,577
Buckeye Coal & Coke Co.	100,143	106,966	120,017	125,277
Goodwill Coal & Coke Co.	53,333	63,934	59,781	73,934
Elkhorn Coal & Coke Co.	9,103	49,754	68,473	31,589
Shamokin Coal & Coke Co.	8,730	56,286	66,730	74,171
Norfolk Coal & Coke Co.	4,613	47,159	53,444	74,994
Turkey Gap Coal & Coke Co.	10,000	20,403	62,467	78,607
Crozer Coal & Coke Co.	3,358	61,588	119,575	136,517
Houston Coal & Coke Co.	3, 51	54,854	69,348	74,409
Powhatan Coal & Coke Co.	.....	31 5 9	66,457	80,932
Lick-Branch Coal & Coke Co.	.....	.....	5,673	69,251
Richlands Coal & Coke Co.	.....	.....	.....	43,405
Lynchburg Coal & Coke Co.	.....	.....	.....	31,740
Uplands Coal & Coke Co.	.....	.....	.....	6,169
Coaldale Coal & Coke Co.	.....	.....	17,487	85,878

Totals..... 1,382,397 1,618,587 1,798,721 2,038,807
*The figures for 1891 are for 11 months to December 1.

There has been remarkable progress in the coke industry of the Pocahontas region during the past year. A number of new companies have commenced operations during the past year, and there has been a large increase in the number of ovens. On January 1, 1890, the condition of the industry was as follows:

Number of ovens completed.....	1,765
Number of ovens building.....	654
Number of ovens contemplated.....	530

In two years 540 ovens have been built and 1,565 are under construction. The number of ovens complete, building and contemplated at the close of 1891 is as follows:

COKE OVENS IN POCAHONTAS FIELD.

Operation.	Completed.	Under construction.	Contemplated.
S. W. Virginia Imp. Co.	444	.....	206
Mt. Ck. & Coaldale Co.	203	.....	97
Caswell Ck. C. & C. Co.	146	.....	80
Booth-Bowen	91	.....	9
Buckeye	100	.....	40
Goodwill	50	.....	.....
Louisville	75	.....	35
Elkhorn	100	.....	64
Shamokin	100	.....	150
Norfolk	No. 1..... 146	.....	45
"	No. 2..... 120	.....	36
"	No. 3..... 100	.....	100
"	No. 4..... 100	.....	100
Algoma	.....	100	.....
Gilliam	.....	100	.....
Keystone	.....	100	.....
Greenbrier	.....	100	.....
McDowell	.....	200	.....
Rolf	.....	100	.....
Tidewater	.....	100	.....
W. C. Brooke et al.	.....	100	.....
Johnston et al.	.....	100	.....
Crozer C. & C. Co.	890	50	.....
Crozer No. 2, Upland.	10	.....	.....
Turkey Gap C. & C. Co.	145	35	.....
Houston	103	90	.....
Lynchburg	100	.....	.....
Powhatan	125	50	.....
Goodrich & Mann	.....	100	.....
Pulaski	.....	150	.....
Wilson	.....	100	.....
Shawnee	.....	100	.....
Luther Clawson & Co.	.....	300	.....
Bottom Creek	.....	150	.....
Empire C. & C. Co.	.....	100	.....
Totals.....	2,305	1,365	1,978

MARYLAND.

The shipments from Maryland mines in the Cumberland region for the week ended December 12, and the year 1891 to that date, and the year 1890 to December 13, were as follows:

	Week Dec. 12.	Total Dec. 12.	Dec. 13, 1890.
Borden Mining Co.	6,047	285,031	274,943
Consolidation Coal Co.	15,357	855,584	694,146
Union Mines	3,777	168,823	14,737
George's Creek Coal & Iron Co.	4,430	341,674	330,099
New Central Coal Co.	4,013	197,085	216,535
Swanton Mining Co.	180	96,187	34,543
Potomac Coal Co.	2,663	174,676	207,909
Franklin Consolidated Coal Co.	1,149	73,657	62,609
Piedmont Cumberland Coal Co.	869	41,622	27,958
Barton & George's Creek V. Coal Co.	1,329	108,993	105,729
Big Vein Coal Co.	1,001	58,702	36,702
Anthony Mining Co.	328	8,517	.....
American Coal Co.	9,047	423,549	394,333
Maryland Coal Co.	7,068	354,974	350,323
Totals.....	62,473	3,228,135	2,985,317

Early in the year steps were taken by the trustees of the Chesapeake & Ohio Canal to place the canal in condition for the resumption of traffic, and as an inducement to canal men to enter business they were guaranteed traffic enough to cover repairs on their boats. The canal was idle throughout 1890 on account of the ruin wrought by the great floods of 1889, but the work of restoration was carried sufficiently far in the past year to enable the shipments of 50,727 tons of coal from the Cumberland region up to the middle of December.

WEST VIRGINIA.

West Virginia has been the scene of great activity in coal and coke operations during the past year, and the number of new companies organized leads all the other States. In our summary of the coal production of the Southern States during 1891 the output of the Pocahontas region was credited to Virginia, as the shipments are made from the Virginia side of the line and the coal is generally regarded as Virginia coal, although a large portion of it is really mined in Mercer and McDowell counties, in West Virginia. The actual output of West Virginia mines is therefore somewhat larger than the figures we have given above, and the figures given by the mine inspectors show more accurately the product of the State. The latest statistics prepared by the inspectors cover the year ended June 30, 1891, and show the actual production in that period to have been 7,281,430 tons of coal and 1,238,418 tons of coke. This output was distributed by counties as follows:

Counties.	Tons coal.	Tons coke.
Harrison.....	113,278	6,314
Taylor.....	83,851	8,458
Ohio.....	80,713	.....
Preston.....	154,497	66,541
Marion.....	725,590	165,458
Monongalia.....	46,100	4,906
Mineral.....	623,067	.....
Marshall.....	138,243	.....
Brooke.....	33,999	.....
Tucker.....	189,058	69,163
Mason.....	110,398	.....
Putnam.....	159,856	.....
Kanawha.....	1,209,356	5,607
Fayette.....	1,237,017	320,994
Mercer.....	1,210,723	254,730
McDowell.....	701,871	230,239
Totals.....	7,181,430	1,238,418

These figures show an increase over the preceding year of 2,555,383 tons of coal and 572,225 tons of coke, the coke product having more than doubled in a single year. The mines in operation during 1890-91 numbered 179, employing 14,178 men. At the close of the year there were 4,117 completed coke ovens and 777 under construction.

The latest published figures of shipments of coal by the Chesapeake & Ohio Railroad show the movement of 2,499,842 tons up to December 7, as compared with 2,219,641 tons for the corresponding period in 1890. The output and distribution of coal on the lines of this company during the last two fiscal years, ended June 30, was as follows:

	1889-90. Gross tons.	1890-91. Gross tons.
Cannel.....	10,444	20,473
Gas.....	463,742	518,262
Splint and block.....	420,197	425,218
New River.....	790,982	1,042,527
Coke.....	234,759	269,198
Total.....	1,920,124	2,275,698

Of the total coal tonnage handled in 1890-91 by this company, 772 370 tons were shipped at Newport News.

The latest official figures of the coal and coke traffic of the Great Kanawha valley end June 30, 1891. Colonel Wm. P. Craighill, of the United States Army Engineer Corps, furnishes us the following figures, covering the last 10 years:

Year ending—	SHIPMENTS BELOW KANAWHA FALLS.		Total.
	By river. Tons.	By rail. Tons.	
June, 1881.....	385,148	265,266	650,414
June, 1883.....	614,818	531,610	1,146,428
June, 1884.....	735,841	420,567	1,210,210
June, 1885.....	712,493	591,589	1,311,312
June, 1886.....	714,495	558,150	1,272,615
June, 1887.....	929,335	766,436	1,695,771
June, 1888.....	804,695	838,507	1,643,532
June, 1889.....	1,076,872	881,245	1,958,117
June, 1890.....	966,462	1,097,337	2,063,799
June, 1891.....	1,030,454	1,146,721	2,177,175

The situation in the Upper Monongahela district of West Virginia at the close of the year is indicated by the following statement of operations for the week ended December 12, 1891:

Operator.	Coke Ovens.	Days Worked.	Shipments. Coal.	No of Coke men.
Monongahela C. & C. Co.....	321	6	8,370	550
Montana C. & C. Co.....	158	6	4,220	345
Gaston Coal Co.....	60	6	3,560	215
West Fairmont C. & C. Co.....	36	6	1,725	91
Hutchinson Bros.....	18	6	1,300	108
Orrel Coal Co.....	3	3	800	62
Orrel Coal Co.....	4	4	755	35

The new railroad connections planned or completed during the past year in West Virginia will greatly stimulate the development of the mineral resources of the State in the near future. Early in 1891 a new company was formed at Wheeling, composed chiefly of large consumers of coal and coke, for the purpose of building an independent line through the Upper Monongahela district to the Connellsville region in Pennsylvania. The Baltimore & Ohio and the West Virginia Central have also been pushing actively for new business during the year and have tapped numerous new fields.

The completion of the Kenova bridge of the Norfolk & Western during the past month is a matter of no little importance to the coal interests of West Virginia. Within the next 12 months the Ohio extension of this road will have been completed and put in operation, and an outlet will be furnished for a new and very important section of the West Virginia coal fields. Along Twelve Pole river, in Logan and Wayne counties, is one of the best fields of splint coal in the State. The Guyandotte Coal Land Association, a corporation allied with Norfolk & Western interests, owns 260,000 acres of coal land in this region, and is making arrangements for extensive operations. The property has been carefully explored and examined, and when once developed will prove an important factor in the West Virginia coal trade.

New Enterprises.

As an illustration of the great activity that has prevailed throughout West Virginia during the past year the following list of new coal companies will have significance, although not representing the full extent of what has been done:

Acme Coal & Coke Co., Opekiska.
Angoma Coal & Coke Co., Elkhorn.
Blanche Coal Co., Collier.
Bottom Creek Coal & Coke Co., Bottom Creek.
Central West Virginia Coal & Coke Co., Clarksburg.
Coaldale Mining & Manufacturing Co., Coaldale.
Enterprise Coal Co., Charleston.
Elk Hill Coal & Coke Co., Clarksburg.
Fairfax Coal & Coke Co., Piedmont.
Flaggy Meadow Gas Coal Co., Mannington.
Glendale Coal Co., Glendale.
Glen Falls Coal & Coke Co., Clarksburg.
Henry Coal & Coke Co., Henry.
Hope Splint Coal Co., Ferguson.
Kenova Coal Co., Kenova.
Kanawha-Gauley Coal & Coke Co., Cannelton.
Levering Coal & Coke Co., Piedmont.

Malcolm Coal Co., Winnifrede Junction.
Monarch Coal Co., Peabody.
Marshall County Oil, Gas & Coal Co., Moundsville.
Mount Clare Coal & Coke Co., Mount Clare.
McDowell Coal & Coke Co., McDowell.
New York Coal & Coke Co., Charlestown.
Palatine Coal Co., Fairmont.
Pittsburg Gas Coal & Coke Co., Fairmont.
Piedmont & West Virginia Coal & Phosphate Co., Piedmont.
Randolph Coal Co., Roaring Creek.
Red Ash Coal Co., Fayette county.
Snow Creek Coal & Coke Co., Corinth.
Springfield & New River Development Co., Springfield.
Tidewater Coal & Coke Co., Helena.
West Fork Coal & Coke Co., Faram.
West Virginia Coal & Coke Co., Clarksburg.

TENNESSEE.

Through the courtesy of Commissioner Ford, of the Tennessee Bureau of Labor, we are able to present the following statistics relative to the coal industry of that State during the year 1891:

Tons of coal produced.	Miners.	Employees, laborers, etc.	Total.	Aver. tons produced by miner.	Annual wages of miners.
1880.....	495,131	825	385	1,210	\$457 00
1881.....	850,000	1,410	565	2,075	452 25
1882.....	1,458,516	2,205	1,330	3,500	447 51
1883.....	1,700,000	2,650	1,490	4,140	432 08
1884.....	1,967,397	3,125	1,559	4,684	389 38
1885.....	1,925,689	2,930	1,570	4,500	377 28
1886.....	2,358,000	3,735	1,868	5,598	363 40
1891.....	2,572,000	4,000	2,050	6,050	321 50

During the month of November the Tracy City division of the Tennessee Coal, Iron & Railroad Co. mined 33 965 tons of coal, the output for the eleven months to December 1 being 367,656 tons. The shipments in November were 13,722 tons of coal and 11,754 tons of coke. For eleven months the shipments amounted to 179 652 tons of coal and 118,678 tons of coke. In October the output of these mines was 38,208 tons, the largest production ever reached in one month.

KENTUCKY.

The report of Inspector of Mines C. J. Norwood shows an output of 1,373,266 tons of coal from 83 collieries during the six months to June 30, 1891. The production during the past seven years has been as follows:

1884.....	1,550,000
1885.....	1,600,000
1886.....	1,650,000
1887.....	1,933,185
1888.....	2,342,058
1889.....	2,205,434
1890.....	2,483,144

On October 1, 1891, there were 119 commercial mines fully developed for working, and 88 of them were at that time in operation. The total number of employees in and about the mines of Kentucky is about 8,000, of whom about 6,500 are employed under ground.

The output of coke for the six months ended June 30, 1891, was as follows:

	Ovens.	Tons.
St. Bernard Coal Co.....	58	8,988
Cumberland Valley Coal Co.....	20	778
Total.....	78	9,766

The sale of a large tract of coal lands in Eastern Kentucky to a Belgian syndicate was recently reported, with the statement that the purchasers intend extensive development of the property. The plants of the Cumberland Valley Coal Co. at Pineville are said to be included in the transfer. The Pine Mountain Iron & Coal Co. has completed a plant of 100 coke ovens at Straight Creek, near Pineville, during the year, and development has been active around Middlesborough and in other sections of the State.

NORTH CAROLINA.

A new enterprise of some significance has been inaugurated during the past year by the Greensboro Coal & Mining Co., which has undertaken the development of a tract of property in the Dan River coal field at Walnut Cove, in Stokes county. Work was commenced early in the year, and the coal thus far taken out has proved of good quality. It is a semi bituminous coal, burning with great heat and producing no clinkers. It is hoped that the coal will prove suitable for coking, in case of which it will be of great value, and will furnish a local supply for the new blast furnace at Greensboro.

EXPORTS OF SOUTHERN COAL.

One of the most significant features of the Southern coal industry during the past year has been the growth of the export trade and the increasing attention that is being paid to that branch of the business. This has been particularly noticeable in Alabama, where several new companies have entered upon this business. The Export Coal Co. has erected extensive accommodations at Pensacola, Fla., for handling Alabama coal received over the Louisville & Nashville Railroad, and there has been a heavy business in this line at that port. The Mexican Coal & Steamship Co. has also entered the business at the same port, shipping coal to Corpus Christi, Texas, for

distribution to Mexican points by the Mexican National Railway. A more recent enterprise is a scheme for the construction of a railroad from Tuscaloosa to the coal regions for the transportation of coal to Tuscaloosa, to be shipped thence down the Warrior river to Mobile for export.

Early in the year the Georgia Pacific Railroad commenced the shipment of Alabama coal to New Orleans by way of barges from Greenville, Miss., and Alabama coal now has a strong foothold in the New Orleans market.

A YEAR OF LARGE CROPS.

Rapid Strides of Progress in Agricultural Interests in the South.

In all the staple crops of the South the past year has been a phenomenal season. Cotton, corn, wheat, sugar, rice and tobacco have been raised in greater abundance than ever before, owing, first, to an increased area under cultivation, and, second, to an unusual yield per acre, due to exceptionally favorable conditions that prevailed throughout the country. The greater attention that has been given to the diversification of crops and the increased acreage devoted to corn, wheat and truck are gratifying indications. Hitherto too much dependence has been placed upon cotton, with the result that the last crop has been in excess of the world's demands. The losses in cotton during the past year will be of immense ultimate advantage to the South in the stimulus that has been imparted to the cultivation of other crops.

The cotton crop of the last season is treated elsewhere by itself, and the cereals call for especial mention in this place. The South has never before come so prominently forward as a producer of cereals, but the past season has demonstrated that this industry can be conducted upon a large scale and with highly satisfactory results in the South. The increase in the corn crop during the past year has been astonishing, amounting to 117,691,000 bushels, or 26 per cent. of the crop of 1890. Wheat shows a gain of 16,232,000 bushels, or 37½ per cent., indicating a much larger share of attention to this crop in proportion to its amount than to any other agricultural product.

From the reports on acreage and yield per acre, prepared by the Department of Agriculture, we have computed the corn and wheat crops of the Southern States for 1891 as follows, which will not, we think, differ materially from the government's final report:

States.	Corn.		Wheat.	
	1890. Bushels.	1891. Bushels.	1890. Bushels.	1891. Bushels.
Maryland.....	16,330,000	18,511,000	6,208,000	5,838,000
Virginia.....	36,922,000	41,127,000	5,614,000	7,218,000
North Carolina.....	36,264,000	38,716,000	3,156,000	4,075,000
South Carolina.....	16,078,000	19,293,000	750,000	992,000
Georgia.....	31,306,000	38,139,000	1,411,000	2,333,000
Florida.....	4,570,000	5,450,000	.....	.....
Alabama.....	25,390,000	34,245,000	1,319,000	2,151,000
Mississippi.....	24,396,000	24,155,000	286,000	483,000
Louisiana.....	16,979,000	18,738,000	.....	.....
Texas.....	61,802,000	93,127,000	3,575,000	6,435,000
Arkansas.....	33,443,000	43,940,000	1,575,000	2,172,000
Tennessee.....	67,692,000	81,825,000	7,873,000	11,512,000
West Virginia.....	13,435,000	18,888,000	2,320,000	3,143,000
Kentucky.....	63,645,000	84,192,000	9,152,000	12,335,000
Total.....	450,652,000	568,343,000	43,245,000	59,477,000
Increase.....	.....	117,691,000	16,532,000	.....

Under the stimulus of the bounty on domestic sugar there has been an immense increase in the crop of the past season, and there has been a marked improvement in the quality of the sugar as well, owing to the requirements necessary to obtain the bounty. Under the law, sugar must test 90 degrees by the polariscope to be entitled to receive the bounty of two cents per pound, and this has caused a great improvement in machinery and methods during the past year. The results of the law must, therefore, be satisfactory, not only as a means of increasing the product, but improving the quality.

From the most reliable estimates we are able to obtain, furnished to us by Messrs. Willetts & Gray, of New York, the crop of cane sugar during the past season appears to have been 420,560,000 pounds, as against 305 766,271 pounds in 1889-90. The value is figured at an average of 3¼ cents per pound, plus the bounty of 2 cents per pound, making 5½ cents, against an average of about 5 cents for the previous crop. The estimated yield and value of the crop of the past season is divided as follows:

	Pounds.	Value.
Louisiana.....	403,200,000	\$21,168,000
Texas.....	14,560,000	764,400
Florida.....	2,800,000	147,000
Total.....	420,560,000	\$22,079,400

The rice crop of the past season is estimated by Dan Talmage's Sons, of New York, at 134,000,000 pounds, the yield for previous years being as follows:

1884-85.....	109,500,000
1885-86.....	150,500,000
1886-87.....	155,500,000
1887-88.....	113,600,000
1888-89.....	124,700,000
1889-90.....	132,000,000
1890-91.....	134,000,000

The tabular statement below, compiled from the returns of the Department of Agriculture, shows the number of cattle in the South during the last four years. The total

increase for the whole country for 1891 was only 93,332 head, whereas the total increase of 1890 over 1889 was 2,470,865. It will thus be perceived that the decrease is not confined to any one section of the country:

States.	1891.	1890.	1889.	1888.
Maryland.....	268,032	269,161	274,459	273,303
Virginia.....	697,000	691,559	678,605	681,554
North Carolina.....	657,158	670,559	666,797	663,141
South Carolina.....	364,867	356,971	361,640	358,716
Georgia.....	920,272	935,434	927,662	936,259
Florida.....	60,3196	620,153	637,088	629,734
Alabama.....	758,189	765,847	758,765	741,826
Mississippi.....	730,330	751,096	734,827	714,813
Louisiana.....	471,558	473,144	450,804	433,465
Texas.....	7,876,271	8,011,105	7,923,950	7,109,220
Arkansas.....	1,033,775	916,333	844,359	773,461
Tennessee.....	826,757	862,318	841,814	800,811
West Virginia.....	468,257	466,477	460,112	452,165
Kentucky.....	793,685	840,821	842,971	842,971
Totals.....	16,469,377	16,641,187	16,381,793	15,411,439

THE COTTON CROP.

An Enormous Gain Over the Highest Point of Previous Seasons.

The cotton crop for the season of 1890-91 reached the total of 8,652,597 bales, according to the figures of the New Orleans Cotton Exchange, showing a gain of 1,341,275 bales over the great crop of the season of 1889-90. The enormous yield of this staple crop of the South has not been altogether a blessing, as it has resulted in a very low price and consequent reduction of planters' profits. There has also been an era of congestion and low prices in the cotton-goods trade. In the New York market middling upland cotton reached 7 15-16 cents in August, the lowest point touched in many years. The highest figure obtained in that market during the season was 11 cents, the lowest maximum since 1886. During the season ended August 30, the price of 64x64 printed cloths fell from 3.31 cents to 2.88 cents, and standard sheetings declined from 7 1/4 cents to 7 cents. Recently the print-cloth market has shown a decided improvement. Notwithstanding these elements of disadvantage, the cotton-manufacturing industry of the South shows a marked advance in the number of mills, the number of spindles and looms and the consumption of cotton. In fact, it appears that the Southern industry has shown itself to better advantage under the depressing influences than the competing industry in the North. During the past year, more than ever before, the advantage which Southern mills enjoy from their proximity to the sources of supply of raw material have been brought prominently before the public. The depression in the industry has awakened discussion of the comparative advantages of the North and South in the matter of cotton manufacture, and it is needless to say that the result of the discussion has been favorable to the South.

The exports of cotton during the season amounted to 5,778,822 bales, as compared with 4,900,440 bales for the previous season, and 4,738,657 bales in 1888-89.

Great Britain took 3,329,432 bales, France 559,099 bales, and the exports to the Continent and Channel amounted to 1,890,291 bales, in which were included 31,330 bales for Mexico and 4,494 bales exported from New York to Japan.

The acreage of the cotton of 1890-91 was 19,469,617 acres, as compared with 19,080,275 acres in 1889-90. The reports of the Department of Agriculture show a reduction of about 450,000 acres in the acreage of the crop of 1891-92, which is placed at 19,018,460. The details of acreage of the crops of 1890-91 and 1891-92 are as follows:

State.	1890-91, acres.	1891-92, acres.
North Carolina.....	1,082,135	1,017,207
South Carolina.....	1,678,935	1,611,797
Georgia.....	3,969,237	3,821,237
Florida.....	267,750	205,112
Alabama.....	2,850,683	2,738,579
Mississippi.....	2,696,718	2,561,881
Louisiana.....	1,022,202	1,022,202
Texas.....	4,519,079	4,745,032
Arkansas.....	1,458,357	1,400,022
Tennessee.....	881,473	837,400
Total acreage.....	19,469,617	19,018,460

CONSUMPTION OF COTTON BY SOUTHERN MILLS.

During the year ended August 31, 1891, the Southern mills consumed 604,661 bales of cotton, as compared with 546,894 bales for the preceding year, making a gain of 57,767 bales, or 10 56 per cent. The total number of mills reported in 1890 was 336, of which seven have since been burned. Twenty-two new mills were built, and the number of concerns was reduced 11 by consolidations, making the total number on August 31, 1891, 340 mills. Of this number 277 old and 10 new mills were in operation.

The total number of spindles in the Southern cotton mills was 1,989,845, as compared with 1,819,291 in 1890. The number of spindles in operation was 1,674,690 in 1891, as compared with 1,423,327 in 1890. The location of the active mills, spindles and looms, and the consump-

tion of cotton in the two years, as given by the New Orleans Cotton Exchange, were as follows:

States.	No. Mills.*	Looms.†	Spindles.‡	1891.	1890.
Alabama.....	18	2,045	113,258	39,145	35,773
Arkansas.....	2	196	6,000	610	433
Kentucky.....	55	10,977	456,939	153,818	146,385
Louisiana.....	5	677	45,759	14,536	13,509
Mississippi.....	4	1,428	54,500	13,660	14,066
Missouri.....	7	1,327	52,768	15,163	16,069
North Carolina.....	1	.....	7,000	1,528	1,644
South Carolina.....	107	8,310	439,445	140,508	119,595
Tennessee.....	49	10,977	434,537	164,957	144,055
Texas.....	23	2,033	96,480	30,508	34,908
Virginia.....	3	656	29,476	6,522	3,614
.....	13	2,793	94,537	23,797	17,224
.....	287	40,718	1,833,710	604,661	546,894
Less consumed and taken from Southern sea-ports, and included in port receipts.....				39,379	30,217
Net consumption to be added to crop.....				565,282	516,677

* Mills in operation only.

† Employed in mills in operation.

The consumption of cotton by Northern mills in 1890-91 amounted to 2,027,362 bales, as compared with 1,799,258 bales in 1889-90.

THE CROP OF 1891-92.

The present indications point to a slightly smaller crop for the coming season than that of the past. The estimated acreage is 97.7 per cent. of that of 1890-91, and the estimated yield per acre is also smaller. Mr. A. B. Shepperson, the New York cotton statistician, gives this view of the growing crop: "The preponderance of well-informed opinion is that there is in every State except Texas a reduction from last year's yield, the greatest falling off being in the Atlantic States. Assuming the yield in the Carolinas to be 30 per cent. less than last season, in Georgia and Florida to be 20 per cent. less, in Mississippi, Alabama and Arkansas to be 10 per cent. less, in Louisiana and Tennessee to be 15 per cent. less, and in Texas to be the same as last season, would make the general yield about 1,086,000 bales below that of last season. Deducting this from last year's estimated yield of 8,900,000 bales, would make the yield of this season 7,814,000 bales. If to this is added the 226,000 bales left in the interior from the last crop, it would make the commercial crop of 1891-92 about 8,040,000 bales." Bradstreet's estimates the crop at over 8,400,000 bales.

BANKING INTERESTS IN 1891.

Many New Banks and Large Additions of Capital in the South.

The past year has been a trying period for financial institutions throughout the country, and many of the strong banks in old-established business centers have been compelled to struggle vigorously to keep alive. Every branch of business has been conducted upon a more conservative basis than usual; credit has been disturbed, and capital has been slow to respond to new projects of any kind. The condition of the banks is a pretty good reflection of the general business conditions, and the great decline in the number and capital of new banks organized during the past year well indicates the conservative tendency of capital. As against 307 new national banks, with an aggregate capital of \$36,250,000, which were organized during the year ended October 31, 1890, only 103 banks, with capital amounting to \$20,700,000, were organized for the same period of 1891. The number and aggregate capital of the new national banks organized during the years ended October 31, as reported by the comptroller of the currency, are as follows:

NEW NATIONAL BANKS IN THE SOUTH.

State.	No. of banks.	Capital.	No. of banks.	Capital.
Maryland.....	7	\$750,000	6	\$1,150,000
District of Columbia.....	3	600,000	1	200,000
Virginia.....	2	100,000	5	470,000
West Virginia.....	1	125,000	3	285,000
Kentucky.....	7	660,000	6	415,000
Tennessee.....	7	1,350,000	3	450,000
North Carolina.....	2	150,000	3	150,000
Georgia.....	2	150,000	3	300,000
Florida.....	1	100,000	4	200,000
Alabama.....	5	350,000	1	50,000
Mississippi.....	.....	.....	1	50,000
Louisiana.....	4	650,000	3	100,000
Texas.....	63	5,950,000	17	1,510,000
Arkansas.....	1	50,000	1	50,000
Total.....	105	\$10,985,000	55	\$5,310,000
United States.....	307	\$36,250,000	193	\$20,700,000

It will be observed from these comparative figures that the Southern States show a decrease of about one-half, both in the number of banks and their aggregate capital. In the entire United States the decrease in number of new national banks is almost two-thirds, while the capital invested in new banks in 1891 is little more than one-half of the amount similarly invested in 1890.

The figures given above refer to the 12 months ended October 31, 1891, and covered by the comptroller's report. For the calendar year 1891 we have record of the organization of 51 new national banks in the South with capital

aggregating \$4,510,000. The names, location and capital of these banks are as follows:

Name.	Location.	Capital.
First National Bank.....	Bridgeport.....	\$50,000
First National Bank.....	Russellville.....	50,000
Obio National Bank.....	Washington.....	200,000
Polk County National Bank.....	Bartow.....	\$50,000
First National Bank.....	Fernandina.....	50,000
Tampa National Bank.....	Tampa.....	50,000
Gulf National Bank.....	Tampa.....	50,000
First National Bank.....	Key West.....	100,000
America National Bank.....	Macon.....	\$250,000
First National Bank.....	Cordele.....	50,000
Farmers' National Bank.....	Augusta.....	\$65,000
First National Bank.....	Augusta.....	50,000
First National Bank.....	Pineland.....	50,000
Merchants' National Bank.....	Ashland.....	100,000
First National Bank.....	Fulton.....	100,000
First National Bank.....	Franklin.....	\$50,000
People's National Bank.....	New Iberia.....	50,000
First National Bank.....	Aberdeen.....	\$50,000
First National Bank.....	Gallatin.....	50,000
Equitable National Bank.....	Baltimore.....	50,000
Continental National Bank.....	Baltimore.....	100,000
American National Bank.....	Baltimore.....	200,000
National Bank of Cockeysville.....	Cockeysville.....	50,000
First National Bank.....	Tupelo.....	50,000
First National Bank.....	Elizabeth City.....	\$50,000
First National Bank.....	Hickory.....	50,000
Commercial National Bank.....	High Point.....	50,000
Holston National Bank.....	Knoxville.....	\$100,000
Manufacturers' National Bank.....	Harrison.....	50,000
Dominion National Bank.....	Winston.....	100,000
First National Bank.....	Harrison.....	50,000
First National Bank.....	Necons.....	\$50,000
First National Bank.....	Brownsville.....	50,000
First National Bank.....	Goled.....	50,000
First National Bank.....	Childress.....	50,000
First National Bank.....	Marble Falls.....	5,000
Bonham National Bank.....	Bonham.....	50,000
Weldon National Bank.....	Ladonia.....	50,000
First National Bank.....	Uvalde.....	50,000
Alamo National Bank.....	San Antonio.....	250,000
First National Bank.....	Cooper.....	100,000
First National Bank.....	Jackboro.....	50,000
First National Bank.....	Eagle Pass.....	50,000
Citizens' National Bank.....	Kaufman.....	50,000
Velasco National Bank.....	Velasco.....	50,000
Citizens' National Bank.....	Newport News.....	\$100,000
Citizens' National Bank.....	Romoke.....	100,000
Covington National Bank.....	Covington.....	50,000
Commercial National Bank.....	Hunt.....	\$100,000
Traders' National Bank.....	Clarksburg.....	50,000
First National Bank.....	Bluefield.....	100,000
Total capital of 51 banks.....		\$4,510,000

The condition of the national banks in the Southern States as regards capital, surplus and deposits was as given below on September 26, as reported to the comptroller of the currency:

State.	No. of banks.	Capital.	Surplus.	Individual deposits.	Other deposits.
Baltimore.....	22	\$13,238,965	\$4,293,000	\$21,261,201	\$295,187
Maryland, etc.....	43	3,575,000	1,244,637	9,290,187	15,000
Washington.....	12	2,375,000	593,000	9,991,916	68,051
Dist. Col., etc.....	1	250,000	100,000	815,079	.....
Virginia.....	36	4,556,300	2,171,650	13,764,803	716,938
West Virginia.....	23	3,454,000	591,359	5,734,413	30,000
North Carolina.....	82	3,691,500	675,058	4,451,394	160,000
South Carolina.....	14	1,623,000	935,600	2,739,186	208,778
Georgia.....	32	4,416,350	1,204,137	5,419,510	99,365
Florida.....	17	1,200,000	210,500	3,668,585	100,023
Alabama.....	32	4,304,000	1,039,637	5,561,533	95,673
Mississippi.....	13	1,165,000	439,700	1,956,490	.....
New Orleans.....	10	3,625,000	1,897,500	13,064,098	330,000
Louisiana, etc.....	11	810,000	193,225	1,774,799	50,000
Texas.....	206	34,831,100	4,672,398	26,672,481	381,515
Arkansas.....	10	1,600,000	414,000	1,871,973	110,793
Louisville.....	19	4,901,300	1,132,800	5,092,443	330,000
Kentucky, etc.....	71	10,997,270	2,791,577	11,531,439	1,205,031
Tennessee.....	33	10,380,000	2,197,808	13,435,515	292,795
Total.....	635	\$98,442,485	\$26,868,316	\$126,564,798	\$4,604,546

The volume of business transacted by Southern clearing-houses in ten months of 1891 shows a decrease of \$68,337,126, as compared with the same period of 1890, equivalent to 3 per cent. Comparative figures for ten months are as follows:

State.	1891.	1890.	Dec.
Baltimore.....	\$164,274,421	\$161,619,401	dec. \$2,654,980
Washington.....	81,283,794	77,784,593	inc. 3,499,201
New Orleans.....	456,084,410	459,847,313	dec. 3,762,903
Louisville.....	328,583,481	369,100,403	dec. 40,516,922
Memphis.....	113,841,674	114,416,627	dec. 575,553
Richmond.....	108,593,760	102,249,287	inc. 6,344,473
Galveston.....	143,957,701	96,671,716	inc. 47,285,985
Nashville.....	90,599,561	104,928,783	dec. 14,329,222
Dallas.....	42,108,937	36,179,530	dec. 14,979,599
Fort Worth.....	20,775,015	45,282,345	dec. 15,507,330
Norfolk.....	49,015,043	42,357,000	inc. 6,657,143
Chattanooga.....	21,433,000	20,856,000	dec. 577,000
Birmingham.....	26,530,989	36,320,787	dec. 9,789,798
Lexington.....	20,443,315	21,422,443	dec. 980,228
Totals.....	\$1,182,710,450	\$1,231,047,576	dec. \$48,337,126

A conspicuous feature of the banking business in 1891 is the unusually large number of national banks that became insolvent and were placed in receivers' hands, 25 banks, with capital aggregating \$3,662,000, being thus disposed of during the year ended October 31, as compared with nine banks, with \$750,000 capital, in 1890. Of the 25 banks that failed in 1891, 13, representing \$1,137,000 of capital, were located in Kansas and Nebraska. These failures were due chiefly to four successive crop failures,

aggravated in several cases by the collapse of unwise speculation in real estate.

In the South only six national banks failed during the comptroller's year. These banks were as follows: People's National Bank of Fayetteville, N. C., \$125,000 capital; Ninth National Bank of Dallas, Texas, \$300,000 capital; Florence National Bank of Florence, Ala., \$100,000 capital; First National Bank of Palatka, Fla., \$150,000 capital; Rio Grande National Bank of Laredo, Texas, \$100,000 capital; Farley National Bank of Montgomery, Ala., \$100,000 capital. The aggregate capital of the six banks that failed in 1891 was \$875,000, as compared with \$150,000 capital for the two banks that failed in 1890. Three other national banks in the South which became insolvent in 1891 were able to resume business in a few months. There were six such banks in the entire country, and in only one prior case in the history of the comptroller's office has such an event occurred.

New Manufacturing Enterprises in 1891.

The number of new manufacturing enterprises reported in the South during the last year as compared with preceding years is shown in the following table. The year just ended, of course, shows a smaller number than 1890 or 1889, as the past year was not a propitious time for the inauguration of new enterprises in any part of the world. Considering the conditions that have prevailed, the number of enterprises started is surprisingly large:

	1891.	1890.	1889.	1888.	1887.	1886.
Iron furnaces.....	8	56	50	19	29	28
Machine shops and foundries..	89	136	144	126	103	66
Agricultural implement factories..	16	18	11	16	25	11
Flour mills.....	62	150	166	142	135	92
Cotton mills.....	67	63	111	70	77	9
Furniture factories.....	50	68	74	68	35	23
Gas works.....	24	29	15	27	35	24
Water works.....	16	123	117	84	88	42
Carriage and wagon factories..	36	37	35	63	44	16
Electric-light plants.....	765	234	230	122	83	34
Mining and quarry enterprises..	550	551	605	460	562	174
Wood-work 'g' factories, etc.....	494	632	1,066	796	726	448
Ice factories.....	74	163	90	57	96	50
Canning factories.....	61	75	103	228	82	13
Stove foundries.....	8	2	9	4	4	8
Brick works.....	147	202	200	143	169	53
Miscellaneous iron and steel works, rolling mills, pipe works, &c.,	57	106	67	40	71	26
Cotton compresses.....	23	30	28	37	36	13
Cotton-seed oil mills.....	31	40	99	27	18	4
Miscellaneous enterprises not included in foregoing.....	1,171	1,219	1,895	1,089	992	439
Total.....	3,241	3,917	5,135	3,618	3,430	1,575

SOUTHERN RAILROADS IN 1891

A Very Gratifying Showing of New Mileage and the Operations of Existing Lines.

Notwithstanding the serious depressing influences from which the railroads of the country have suffered during the past year without regard to locality, the Southern roads make an exceedingly favorable showing for the year. Not only has there been a large increase in mileage, but the operations of the old roads have been very successful. The enormous cotton crop, the unusually large movement of grain, the increased business in lumber, iron ore, coal and pig iron, have crowded the railroads with business, and in every respect the operations of the Southern roads have been very satisfactory. The figures of new mileage created during the year add emphasis to the now well-recognized fact that the South offers the best field for new railroad construction in the country. In 1888 the new mileage in the Southern States amounted to 35 per cent. of the total for the country; in 1889 the South contributed 31 per cent. of the new construction, and in 1890 the share of the South was 43 per cent. During 1891 the new mileage built in the Southern States was 42 per cent. of the total in the country. The railroad construction in the South during 1891 as compared with former years is shown in the following figures, for which we are indebted to the Railway Age:

State.	1888.	1889.	1890.	1891.
Maryland.....	3	31	47	3
Virginia.....	142	245	218	184
West Virginia.....	53	49	56	188
North Carolina.....	174	310	309	116
South Carolina.....	221	43	153	212
Georgia.....	452	330	375	238
Florida.....	181	175	73	38
Alabama.....	294	163	254	179
Tennessee.....	185	183	164	151
Louisiana.....	60	110	146	171
Kentucky.....	353	169	222	30
Texas.....	322	343	353	75
Arkansas.....	51	44	137	75
Mississippi.....	64	169	82	155
Total.....	2,494	2,396	2,499	1,740
United States.....	7,066	5,706	5,739	4,168

EARNINGS OF SOUTHERN RAILROADS.

The results of the general financial disturbances of the past year are manifest in the earnings of the railroads of the country, and in this the Southern roads have had to participate in common with other sections. It is gratifying to note, however, that there has been a substantial gain in the gross earnings of Southern roads, although less than in 1890. In our review of 1890 we gave the gross earnings of 44 Southern and Southwestern railroads, aggregating \$100,894,517 for 11 months, being a gain of

\$10,582,309, or 8.5 per cent., over the corresponding period of 1889. In the present review we present a table of gross earnings of 46 Southern and Southwestern railroads for the 11 months to December 1, the aggregate being \$131,682,817, as compared with \$126,726,057 for the same roads during the corresponding months of last year, showing a gain of 3.9 per cent. The table follows:

Name of road.	1891.	1890.	Inc'te.	Decr'te.
Atlanta & Florida.....	\$183,937	\$116,280	.....	\$12,343
B. & O. Southwestern.....	2,275,671	2,130,823	144,848	.....
Birmingham & Atlantic.....	46,951	71,991	.....	25,040
Cape Fear & Yad. Valley.....	541,627	508,346	33,281	.....
Char., Clinch. & Chicago.....	148,702	123,015	25,687	.....
Char., Sumter & Northern.....	124,715	65,669	59,045	.....
Chesapeake & Ohio.....	8,034,758	7,493,687	541,071	.....
Ches., Ohio & Southw'n.....	2,071,390	1,894,127	177,263	.....
Cincinnati, Georgia & Ports.....	63,323	61,994	1,329	.....
Cin., N. O. & Texas Pac.....	3,974,582	4,066,117	.....	91,535
Ala. Great Southern.....	1,730,256	1,783,742	.....	47,486
N. O. & Northeastern.....	1,079,895	1,123,720	.....	43,824
Alabama & Vicksburg.....	636,254	612,950	23,304	.....
Vicks., Shreve. & Pac.....	581,137	533,592	47,545	.....
East Tenn., Vir. & Geor.....	6,297,781	6,016,028	281,753	.....
Fort Worth & Rio Grande.....	295,894	168,378	127,516	.....
Geor. Southern & Florida.....	681,450	660,406	21,044	.....
Kans. C., Ft. Scott & Mem.....	4,349,955	4,410,902	.....	60,947
Kans. C. Mem. & Birm.....	1,086,554	1,099,021	.....	12,467
Little Rock & Memphis.....	643,571	533,532	110,039	.....
Louisville & Nashville.....	18,441,108	17,509,384	931,724	.....
Nash., N. O. & Texas.....	3,415,396	3,689,684	.....	274,288
Louis., St. Louis & Texas.....	429,925	391,953	37,972	.....
Lynchburg & Durham.....	132,059	100,787	31,272	.....
Memphis & Charleston.....	1,421,886	1,629,876	.....	207,990
Mo., Kans. & Tex. System.....	8,586,084	8,105,738	480,346	.....
Mo. Pac. & Iron Mount'n.....	23,346,226	23,080,713	265,513	.....
Mobile & Ohio.....	3,164,265	3,095,297	68,968	.....
New Orleans & Southern.....	134,152	138,373	.....	4,221
Norfolk & Western.....	8,135,392	7,804,366	331,026	.....
Oak & Mississippi.....	3,844,749	3,809,433	35,316	.....
Ohio River.....	618,584	623,332	.....	4,748
Richmond & Danville.....	5,502,000	5,251,500	250,500	.....
Virginia Midland Div.....	2,079,215	2,092,780	.....	13,565
Char., Col. & Aug. Div.....	884,348	871,745	12,603	.....
Col. & Greenville Div.....	769,519	786,700	.....	17,181
West. N. Carolina Div.....	965,048	891,185	73,863	.....
Georgia Pacific Div.....	1,844,070	1,755,575	88,495	.....
Wash., Ohio & W. Div.....	130,447	137,327	.....	6,880
Ashe. & Spart. Div.....	139,392	137,483	1,909	.....
St. Louis Southwestern.....	3,995,581	3,673,000	322,581	.....
Sav., Amer. & Mont.....	457,368	353,442	103,926	.....
South Carolina.....	1,533,386	1,466,202	67,184	.....
Tennessee Midland.....	191,008	192,922	.....	1,914
Texas & Pacific.....	6,477,598	6,559,942	.....	82,344
Texas, Sab. Val. & N. W.....	40,914	46,130	.....	5,216
Total for 46 roads.....	\$131,682,817	\$126,726,057	\$5,956,760	\$944,805
Increase on 34 roads.....	.....	.....	\$5,901,555	\$944,805
Decrease on 12 roads.....	.....	.....	.....	.....
Net increase.....	.....	.....	\$4,956,760	.....

OPERATIONS OF SOUTHERN RAILROADS.

The condition of the Southern railroads during the past two years is well indicated by the brief summaries of operations presented below. The figures given are taken from the latest annual reports of the companies, and have been condensed to show at a glance the most important items of operations. Most of the reports are for the years ended June 30, 1891 and 1890, but in a few instances the reports cover later periods:

ALABAMA GREAT SOUTHERN.			
	1889-90.	1890-91.	1891-92.
Gross earnings.....	\$1,957,365	\$1,942,989	.....
Operating expenses and taxes.....	1,248,377	1,362,337	.....
Net earnings.....	\$698,988	\$580,652	.....
Other income.....	40,000	40,519	.....
Total.....	\$668,988	\$621,171	.....
Deduct interest, dividends and miscellaneous expenses.....	653,637	321,925	.....
Surplus.....	\$5,351	\$399,246	.....
ALABAMA & VICKSBURG RAILWAY.			
	1889-90.	1890-91.	1891-92.
Gross earnings.....	\$676,662	\$648,401	.....
Operating expenses and taxes.....	497,948	498,496	.....
Net earnings.....	\$178,714	\$149,905	.....
Deduct interest on bonds and miscellaneous.....	115,347	117,215	.....
Surplus.....	\$63,367	\$32,690	.....
ATLANTA & WEST POINT.			
	1891.	1890.	1891.
Gross earnings.....	\$483,953	\$473,441	.....
Operating expenses.....	\$305,636	\$305,078	.....
Net earnings.....	\$178,317	\$168,363	.....
Gross earnings per mile.....	\$3,610	\$5,498	.....
Operating expenses per mile.....	4,142	5,543	.....
Net earnings per mile.....	\$1,468	\$1,955	.....
Per cent. of expenses to earnings.....	73.8	64.4	.....
BALTIMORE & OHIO.			
	Year ended Sept. 30, 1890.	Year ended Sept. 30, 1891.	1891.
Total earnings.....	\$24,412,095.90	\$24,539,394.91	.....
Total expenses.....	16,960,869.79	17,078,232.86	.....
Net earnings from the operation of the property.....	\$7,445,226.11	\$7,452,162.05	.....
Add income from other sources.....	1,509,837.42	1,239,877.14	.....
Total.....	\$8,955,063.53	\$8,712,039.19	.....
Deduct net earn. from Wash. Brch.....	\$76,171.93	190,766.78	.....
Available income.....	\$8,578,891.60	\$8,521,272.41	.....
From which deduct interest on bonded indebtedness, rentals, taxes and other charges for the year.....	6,417,598.97	6,429,097.84	.....
Balance.....	\$2,161,292.63	\$2,092,174.57	.....
Dividend on 1st preferred stock, 6 per cent.....	\$180,000	.....	.....
Dividend on 2d preferred stock, 6 per cent.....	130,000	.....	.....
Remainder.....	\$1,861,292.63	\$1,792,174.57	.....
From which payments have been made to retire bonded indebtedness.....	481,057.81	471,557.81	.....
Leaving a balance of.....	\$1,380,234.82	\$1,320,616.76	.....
CAPE FEAR & YADKIN VALLEY.			
	1890.	1891.	1891.
Total earnings.....	\$450,618	\$599,839	.....
Total expenses.....	260,045	350,371	.....
Net earnings.....	\$190,573	\$249,468	.....

CHESAPEAKE & OHIO.

	1889-90.	1890-91.
Miles operated June 30.....	923	1,031
Gross earnings.....	\$7,161,040	\$8,127,111
Operating expenses.....	5,455,127	5,990,418
Net earnings.....	\$1,705,913	\$2,136,693
Interest, taxes, &c.....	1,700,000	1,986,882
Surplus.....	\$6,822	\$219,811

During the period covered by this report the company secured more favorable access to Washington by trackage arrangements with the Virginia Midland, Washington Southern and Baltimore & Potomac companies. Since the close of the fiscal year the Craig Valley branch, from Bessemer to Craig City, Va., and the Warm Springs Valley branch were completed and put in operation, adding 51 miles to the system of the company. Contracts were also closed with the owners of a line of steamships to operate regular service from Newport News to England, which was commenced in June last.

CINCINNATI, NEW ORLEANS & TEXAS PACIFIC.

	1889-90.	1890-91.
Total earnings.....	\$4,379,144	\$4,379,144
Operating expenses and taxes.....	2,726,181	3,024,302
Net earnings.....	\$1,652,963	\$1,354,842
Per cent. of operating expenses to earnings.....	63.31	69.66

EAST TENNESSEE, VIRGINIA & GEORGIA.

	1890.	1891.
Mileage.....	1,197.5	1,197.5
Total earnings.....	\$6,420,759.83	\$6,845,032.46
Total expenses.....	4,175,992.79	4,455,958.17
Net earnings.....	\$2,244,767.04	\$2,389,074.29
Fixed charges.....	\$1,366,737.02	\$1,889,981.61
Taxes.....	162,845.05	188,300.35
Surplus.....	\$664,552.99	\$271,531.75

GEORGIA RAILROAD & BANKING CO.

Georgia Railroad.

	1889-90.	1890-91.
Gross earnings.....	\$1,663,636	\$1,891,279
Operating expenses and taxes.....	1,178,771	1,233,331
Net earnings.....	\$484,865	\$657,948
Add other income.....	61,175	60,619
Total.....	\$546,040	\$718,567
Deduct rental of road, advances.....	\$22,044	\$718,567

Balance.....	def \$56,004	sur \$118,680
Georgia Railroad & Banking Co.		
Rental of road.....	\$600,000	\$600,000
Bank dividends, etc.....	100,106	50,083
Total.....	\$700,106	\$650,083
Deduct interest, dividends and miscel.....	\$484,865	\$657,948

Balance, surplus.....	\$57,214	\$11,051
GEORGIA SOUTHERN & FLORIDA.		
Gross earnings.....	\$554,956	\$554,956
Expenses and taxes.....	334,619	334,619
Net earnings.....	\$220,337	\$220,337
Interest on bonds.....	205,200	205,200
Surplus.....	\$35,137	\$35,137

LOUISVILLE & NASHVILLE.

	1889-90.	1890-91.
Miles operated.....	2,198	2,198
Total gross earnings.....	\$18,846,004	\$19,220,729
Operating expenses (excluding tax).....	11,419,092	12,058,444
Net earnings.....	\$7,426,912	\$7,162,285
Other income.....	698,086	717,875
Total income.....	\$8,065,598	\$7,880,160
Interest, rentals and taxes.....	\$4,912,415	\$4,618,439
Deficit on leased lines.....	276,542	205,494
Dividends.....	2,460,000	2,460,000
Total disbursements.....	\$7,604,323	\$7,223,933
Surplus.....	\$461,275	\$656,227

	1889-90.	1890-91.
Total earnings.....	\$1,783,730	\$1,747,461
Total expenses.....	1,269,000	1,264,611
Net earnings.....	\$514,730	\$482,850

MOBILE & OHIO.

	1889-90.	1890-91.
Gross earnings.....	\$1,173,431	\$1,173,431
Operating expenses and taxes.....	2,102,513	2,343,475
Surplus earnings.....	\$1,070,918	\$1,215,713
Interest and rentals.....	978,557	1,070,500
Surplus.....	\$92,361	\$145,213

	1889-90.	1890-91.</
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distance of about 15 miles. The intervening portion is being completed as rapidly as possible.

OHIO & MISSISSIPPI.		
	1890-91.	1890-91.
Total earnings.....	\$4,214,747	\$4,108,975
Total expenses.....	2,912,473	2,916,382
Net earnings.....	\$1,302,274	\$1,192,413
Total disbursements.....	1,302,274	1,210,052
Balance.....	sur. \$82,499	def. \$37,639

PETERSBURG.		
	1889-90.	1890-91.
Total earnings.....	\$498,916	\$527,644
Operating expenses.....	374,170	333,830
Net earnings.....	\$124,746	\$193,794

RICHMOND & PETERSBURG.		
	1889-90.	1890-91.
Total earnings.....	\$325,395	\$325,395
Expenses and taxes.....	224,482	234,848
Net earnings.....	\$100,913	\$90,547
Per cent. of operating expenses to earnings.....	69.01	78.3

RICHMOND & DANVILLE.		
	1889-90.	1890-91.
Gross income.....	\$5,947,359	\$5,947,359
Operating expenses.....	3,009,737	3,009,737
Net earnings.....	\$2,937,622	\$2,937,622
Fixed charges, sinking funds and taxes.....	1,725,219	1,725,219
Surplus.....	\$1,212,403	\$1,212,403

Auxiliary system, consisting of operating leases and companies controlled, average mileage 2,014 5/8.		
	1889-90.	1890-91.
Gross earnings.....	\$6,376,575	\$6,376,575
Expenses.....	4,310,397	4,310,397
Net earnings.....	\$2,066,178	\$2,066,178
Deduct fixed charges.....	1,954,471	1,954,471
Surplus.....	\$111,707	\$111,707

Total surplus over operating expenses and all charges of the R. & D. system, exclusive of the Georgia Pacific.		
	1889-90.	1890-91.
Georgia Pacific, 566 miles.....	\$1,334,110	\$1,334,110
Gross earnings.....	\$1,889,315	\$1,889,315
Expenses.....	1,902,131	1,902,131
Deficit.....	\$12,817	\$12,817
Fixed charges and taxes.....	867,590	867,590
Total deficit (Georgia Pacific).....	\$880,397	\$880,397

During the year the Danville & Western Railroad, extending from Danville to Stuart, Va., a distance of 70 miles, was acquired by the company. The Macon & Northern Railroad, extending from Macon to Athens, Ga., was leased jointly with the Central Railroad & Banking Co. of Georgia. The Yadkin Railroad was built between Salisbury and Norwood, N. C., and the North Carolina Midland Railroad was constructed between Winston and the Catawba river.		
	1889-90.	1890-91.
Gross earnings.....	\$701,533	\$701,533
Operating expenses.....	440,244	440,244
Net earnings.....	\$261,289	\$261,289
Other income.....	8,481	9,587
Total.....	\$269,770	\$270,876

RICHMOND TERMINAL.		
	1889-90.	1890-91.
Gross earnings.....	\$41,361,095	\$41,361,095
Operating expenses.....	28,288,191	28,288,191
Net earnings.....	\$13,072,904	\$13,072,904
Charges.....	10,637,183	10,637,183
Surplus.....	\$2,435,721	\$2,435,721

The income account and balance sheet for the years ending November 30 were as given below:		
	1889-90.	1890-91.
Revenue.....	\$1,212,403	\$1,212,403
Dividends Richmond & Danville.....	\$497,810	\$497,810
Dividends East Tennessee 1st preferred.....	448,123	448,123
Dividends Central Railroad of Georgia.....	318,800	318,800
Interest East Tennessee 1st mortgage.....	7,500	7,500
Interest on State of Georgia 3 1/2 per cent. bonds.....	31,158	31,158
Interest on Richmond & Danville equip. 6 per cent. bonds.....	21,000	21,000
Interest and discount.....	16,074	16,074
Interest on advances to companies controlled, not collected but charged in open account.....	72,453	72,453
Interest on bonds owned but not collected, charged in open account.....	141,000	141,000
Total.....	\$1,423,459	\$1,423,459

Expenses—		
	1889-90.	1890-91.
Interest 6 per cent. collateral trust.....	\$330,000	\$330,000
Interest 5 per cent. collateral trust.....	412,500	412,500
Interest on Georgia Co. bonds.....	28,750	28,750
Dividends on preferred stock.....	249,847	249,847
Interest and discount.....	118,023	118,023
General and legal expenses.....	74,476	74,476
Taxes.....	19,176	19,176
Total.....	\$1,212,403	\$1,212,403

SAN ANTONIO & ARANSAS PASS.		
	1889-90.	1890-91.
Total earnings.....	\$1,240,945	\$1,240,945
Operating expenses.....	1,421,880	1,421,880
Net earnings.....	\$319,065	\$319,065

SEABOARD & ROANOKE.		
	1889-90.	1890-91.
Gross earnings.....	\$681,119	\$681,119
Operating expenses and taxes.....	406,352	479,944
Net earnings.....	\$274,767	\$201,175
Other income.....	90,349	77,145
Total.....	\$365,116	\$278,320
Deduct interest, dividends and miscel'l.....	260,752	218,239
Surplus.....	\$104,364	\$60,081

TENNESSEE MIDLAND.		
	1889-90.	1890-91.
Total earnings.....	\$204,283	\$214,230
Operating expenses and taxes.....	151,731	161,269
Net earnings.....	\$52,552	\$52,961

VICKSBURG, SHREVEPORT & PACIFIC.		
	1889-90.	1890-91.
Total earnings.....	\$639,753	\$639,753
Operating expenses and taxes.....	516,739	479,417
Net earnings.....	\$123,014	\$160,336

WILMINGTON & WELDON.

Total earnings.....	\$1,531,833	1890-91. \$1,531,833
Expenses.....	681,137	681,137
Net earnings.....	\$850,696	\$850,696

Receipts—		
	1889-90.	1890-91.
Net earnings.....	\$669,716	\$669,716
Interest, dividends, etc.....	119,676	301,186
Wil. Col. & Augusta lease account.....	154,602	193,678
Premium on bonds sold.....	36,480	61,475
Total.....	\$960,474	\$1,225,055

Disbursements—		
	1889-90.	1890-91.
Interest on bonds.....	\$332,170	\$238,320
Interest on certificates of indebtedness.....	175,000	175,000
Interest on notes.....	34,778	28,238
Dividends.....	200,000	200,000
Total.....	\$742,148	\$641,558
Surplus.....	\$218,326	\$583,497

WILMINGTON, COLUMBIA & AUGUSTA.		
	1889-90.	1890-91.
Total earnings.....	\$644,775	\$644,775
Expenses.....	648,140	665,430
Net earnings.....	\$36,635	\$314,012

Receipts—		
	1889-90.	1890-91.
Net earnings.....	\$36,635	\$314,012
Interest on bonds.....	23,100	\$3,401.2
One half profit of Cent. R. R. of S. C.....	10,078	3,881
Total.....	\$39,713	\$347,278

Disbursements—		
	1889-90.	1890-91.
Interest on bonds.....	\$95,000	\$95,000
Dividends.....	57,600	57,600
Wil. & Wel. R. R. lease account.....	154,602	193,678
Total.....	\$307,202	\$346,278
Balance surplus.....	21,511	1,000

WEST VIRGINIA'S RAILROADS.		
	1889-90.	1890-91.
Gross income.....	\$5,947,359	\$5,947,359
Operating expenses.....	3,009,737	3,009,737
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Net earnings.....	\$2,937,622	\$2,937,622</

than twenty mills, some of the proprietors even going so far as to haul their machinery by wagon ahead of the line so as to be in working order by the time the railroad builders reached them. This was done at several points, and is mentioned simply as an illustration of the great effort made to be first in the field. This West Virginia & Pittsburg Road has been completed as far as Weston and Sutton, and the workmen are now laying track down towards Gauley bridge and over the Gauley river through Fayette and McDowell counties. By the first of July, and possibly earlier, it probably will have made a connection with the Chesapeake & Ohio.

But the one coke works, the Mononga, mentioned above, is not a tithe of the coal development that has taken place on the upper end of the line. Eighteen coal companies have been chartered within the last three months, all of them to operate on the West Virginia & Pittsburg Road.

The building of the West Virginia & Pittsburg was the means of creating more lines that will be almost as important in their bearing upon the State's development. The first of these is the Charleston, Clendenen & Sutton Road, which was incorporated a few months ago by a company of Charleston business men, who have in view the extension of Charleston's wholesale trade and the bringing into that city the usufruct from a large section of territory lying in Kanawha and Clay counties in the valley of the Elk and Kanawha rivers. Kanawha county at an election voted \$100,000 to aid the road, and Clay county gave \$50,000 more. The permanent survey for the line from Charleston up to Sutton, where it will connect with the West Virginia & Pittsburg, have been made. The contracts have been let for building the road from Charleston to the Clay county line. The valleys of the Elk and Kanawha rivers, which are traversed by this line, are no less fertile in coal and timber resources than are the sections before mentioned.

The other road referred to is the Little Kanawha Valley Road, which is to start from Parkersburg, traverse the valley of the Little Kanawha up past Burning Springs to a connection with the West Virginia & Pittsburg Road. The chief resource of this line will be timber, than which there is none finer than that which is to be found in the Little Kanawha valley. The strong and growing city of Parkersburg is giving the line ample financial encouragement, and the preliminary work has all been finished up.

Down the southeastern part of the State, branching off from the Norfolk & Western Railroad at points perhaps twenty miles apart, are to be built three or four short lines, all of which have been incorporated. The incorporators in each case are either members of the management of the Norfolk & Western or are connected with its engineering corps. Their aim is to build side lines or spurs that will cut off into the timber and coal country, thus developing the wealth and making business for the main line of the road. A number of these short branches have been drafted to shoot off from the West Virginia & Pittsburg Road, and the West Virginia Central has under consideration a number of similar short lines. Another railroad which is under consideration, and which will in all probability be built, is to run from Huntington, at the mouth of the Guyandotte river, up that river to a connection with the Norfolk & Western, a distance of about one hundred miles. The people along the Guyandotte river see the great necessity for this line, and in almost every instance where a land owner has been approached the right of way has been given free. A survey has also been made from St. Albans up the Coal river into the coal fields of Boone and Logan counties, with a connection at one end of the Nor-

folk & Western main line, and at the other with one of its branches. This will bring into the world a piece of territory about a hundred miles square which grows the finest hardwood to be found in the world, and which is underlaid with the very finest coal.

Another line has been surveyed, beginning at Covington, Virginia, at a junction of the Chesapeake & Ohio, and running up into West Virginia to a point where it will connect with the West Virginia & Pittsburg Road. Another road that has been surveyed, and for which bids have been asked, and which will probably be built during the coming summer, is a line about twenty-five miles long, from Hinton, Summers county, over to a connection with the Norfolk & Western in Mercer county. While it will not be important in the matter of length, it will be the first connection between the Norfolk & Western and Chesapeake & Ohio Roads in West Virginia, and will at the same time open up a beautiful field of forest and coal.

The Hinton & New River Road is another line that has been incorporated by people who are amply able to see that it is built. The surveys will be made this winter from a point near the mouth of the Greenbrier river, thence up New river, thence along East river to its mouth in Mercer county. The assurances that it will be built are so strong as to leave no doubt in the minds of any.

The Powelton & Pocahontas Road was only chartered a few weeks ago. The incorporators are N. Johnson, A. M. Campbell, D. T. Evans, George S. Couch and E. W. Knight. \$25,000 has been paid in on the capital stock. The company proposes to build a line from the mouth of Armstrong's creek to the Great Kanawha valley, form a junction with the Chesapeake & Ohio Road, southeast through Fayette and McDowell counties to Elkhorn on the Norfolk & Western. Mr. Powell, one of the incorporators, is the representative of an English syndicate which owns and operates extensive coal mines at Powelton. Mr. Couch is president of the National Bank of Charleston, and the other incorporators are prominent business men of West Virginia. It is understood that the English syndicate represented by Mr. Powell will furnish the money for building the line. The incorporators say that surveys will be made as early in the spring as is possible, and that work will be commenced immediately thereafter.

While all these roads have been of great importance to the State on account of the development they carry with them into districts that were heretofore untouched, there is one line that probably will have as important a bearing upon the iron industry in the Wheeling district as any or all of these others will have upon the coal and timber industry of the interior and southern part of the State.

As was said a short time ago, there is hardly a place in West Virginia where a railroad could be built more than a few miles in length without chopping down trees to make way for it, and it also is a fact that in the construction of West Virginia roads very few tunnels are made in solid rock. Coal seams are so common throughout the State and are usually at such convenient levels that railroads merely mine out the coal, thus making an opening through the hill for the line. With such a state of affairs as this it will be clearly seen that a railroad built almost anywhere in the State, if it had an outlet at all, will not have to wait for business, but can simply go to work and make its own.

But the road which I have referred to as having an important bearing upon the iron industry is the Wheeling & Connellsville Road, incorporated a few months ago by business men of Wheeling. The intention at the time of its incorporation, and yet for that matter, is to build a line which will

make the shortest possible route between Wheeling and the Connellsville coke region, at the same time tapping the Fairmont coke region in West Virginia. Connellsville coke has always been looked upon as the standard, and although several efforts have been made to establish West Virginia coke in Wheeling furnaces, the Connellsville coke is still depended upon. Although Senator Camden and others have promised that they will develop a coke which will be sufficiently strong in structure to bear the burden of the heaviest furnace usage, the Wheeling manufacturers have decided that an independent line which will bring their coke to them at a reduced rate is necessary. This Wheeling & Connellsville Road has taken root and has grown very firmly. The work of surveying the line was begun on the 15th December. Mr. Job Abbott, of New York city, who built the bridge and terminal system of the Wheeling Bridge & Terminal Co., has been elected chief engineer, and has sent Mr. Gilmore Brown, with a corps of engineers, out to survey the road. Mr. Brown has promised that the survey shall be finished not later than the first of April, and the company promises that contracts for building the road shall be let within a month after that time.

Heretofore Wheeling iron manufacturers have been compelled to pay from \$1.00 to \$1.25 more for coke, on account of the freight rate, than was charged Pittsburg manufacturers for the same coke. This new line of railroad, being owned and controlled by the manufacturing interests of Wheeling, guarantees that no such state of affairs shall hereafter exist; hence its value to the iron industry.

There are perhaps ten or a dozen other railroads in West Virginia that have been incorporated, and upon which some preliminary work has been done, but in this article I have aimed only to touch those that are either built, building, or which give more than fair promise of amounting to more than roads on paper.

THE BESSEMER ORE REGION OF TEXAS.

Llano and Its Projected Railroads—Active Building Operations.

[Special Cor. MANUFACTURERS' RECORD.]
LLANO, TEXAS, Dec. 22, 1891.

There is no such word as fail in the vocabulary of the citizens of Llano. A railroad at last! That's the size of it. Mr. B. M. Temple, one of the most experienced railroad engineers in Texas, has located the route from Fairland, on the H. & T. C. Railroad, (formerly A. & N. W. Railway) to Llano. The distance is only 28 miles. The H. & T. C. Railway owners will build the road. Their right-of-way agents have been in the field some time, and have completed their work. The heaviest grade on the entire route is one per cent., and no cuts over five feet will be necessary. The Colorado river will be the only stream crossed, and a steel bridge has already been ordered for this. Depot grounds have been selected in Llano, and to convince your readers that this road will be built, we will say that our citizens hold a contract signed by Mr. C. P. Huntington, providing that the road will be completed into Llano April 1st, and upon performance of this condition he is to receive the \$100,000 bonus put up by Llano. The M. K. & T. Railway Co. is building on its Llano extension from Granger, and it is now within 50 miles of Llano with its grading. An engineering corps is now on the way here over this line. The San Antonio & Aransas Pass Railway Co. is arranging to put the ties and rails on the grade that it has built into Llano from its main line, and it is reported that the St. Louis Southwestern Railway will go to work in early spring finishing the grade

from Gatesville to Llano via Lampasas. Putting all these things together, and adding the further fact that President Hornsby, of the Ft. Worth & Rio Grande Railway was recently here and went over the surveyed line of his road, as proposed to be extended from Brownwood to Llano, and the appearance of the Vanderbilts (owners of the latter road) in Texas a few weeks ago, there seems to be a very bright future for Llano. We are safe on three railroads in the next twelve months. Real estate is very active here now, (especially as to mineral properties) and after the holidays are over we expect greater activity.

Several diamond drills are running on iron leads in various parts of the country, and shafts are being sunk. There is not a vacant house in the town. The magnificent three-story hotel of the Llano Improvement & Furnace Co. is ready to be opened February 1st. It is the best hotel building in Western Texas, and is being thoroughly furnished in the most comfortable and modern style. Some dozen or more two-story stone stores, granite fronts, are now rapidly going up near the new hotel in North Llano. Several hundred residences and business houses will start up April 1st on completion of the H. & T. C. Railway. Arrangements are being made to begin work on the dam across the Llano river here, to furnish power for factories and street cars, electric lights and water works. A company is organized for that purpose. The county will shortly begin work on an iron bridge across the Llano at the foot of Main street, which will put North Llano and the court house within two minutes' walk of each other.

Several new granite quarries have recently been opened. A mountain of soapstone of remarkably pure quality is being opened near the city. Col. W. A. H. Miller and Mr. Richard Wooley, Jr., the latter of San Antonio, have recently made some rich discoveries of gold in their mine a few miles east of Llano. The mine now promises to be very valuable. Marble of several colors and of pure variety is being quarried here in considerable quantities. These marbles are in great demand throughout the State and the quarries will become very valuable properties as soon as the railroad gets in from Fairland. In less time than 90 days from this date thousands of people all over the United States will begin asking the question: "Having in mind a Lowell built upon its water power; a Rutland upon its marble; a Quincy upon its granite; a Birmingham upon its iron; who can foretell the future of Llano, which excels all these?"

C. S. HARDY.

Chicago Iron Market.

CHICAGO, Dec. 26, 1891.

Chicago market is beginning to show a good amount of activity for this season of the year, and volume of buying has been larger than usual for the month of December. Small orders for both coke and charcoal brands have been numerous, and in addition various deals of larger size have been closed. Coke irons have been most largely in demand, the sales made having been brought about by the low prices which have been ruling, consumers realizing that there is little chance for any further decline, and on the other hand that ruling prices are liable to stiffen somewhat after first of the year.

There is no change in Lake Superior charcoal market—\$17.00. Chicago continues to be bottom on all the leading brands, figures reported below this have been made by two or three smaller furnaces having large stocks which they have been forced to move. Situation must end in better figures or a material cutting down of production through the blowing out of stacks.

The general outlook continues healthy in all respects: indications point to a good business for the year 1892.

ROGERS, BROWN & MERWIN.

SOUTHERN LUMBER.

The Record of Trade During 1892.

Timber Property Steadily Increasing in Value.

[Written for the MANUFACTURERS' RECORD by W. H. HOWCOTT, of New Orleans.]

The past year has not been one of great prosperity in the lumber trade of the South; in fact, such a period of long depression has never been known before.

There are many failures to record amongst the "saw-dust" fraternity, and on every side is to be seen the wreck and collapse of some lumber firm which operated "not wisely nor well," but which attempted with a few thousand dollars in cash to transact a business aggregating several hundred thousand dollars, but, unfortunately for them, the scheme did not work to success.

It is an established fact, in the order of political economy, of financial enterprises and in the pursuit of all commercial transactions, that "the day for settlement must come," and that it is the part of wisdom to so shape your obligations and so date your promises to pay that maturity shall mean payment. This golden rule was not observed by a great number of our lumbermen; they ignored the fact that such an event as "over-trading" or "over-reaching" and straining of credit was ever possible. They placed out large lines of credit; shipped off the product of their mills, to be paid for at some indefinite period; kept their mills running to the fullest capacity; bought high-priced stumpage on credit—all regardless of settlement day. The financial crisis set in, and these saw-mill and lumber-firm wrecks are the results. It cannot be charged to the shrinkage in the values of Southern timber lands as the cause of these failures, for it is not the case. Amidst all of the financial crash and the immense liquidation which has been going on throughout the world for the past year, when values of all sorts and every character have shrunk, Southern pine, oak and cypress stumpage have maintained its values, proving invulnerable to the attacks of money tightness and enforced liquidation of bankrupt mill firms.

There are some instances where Southern timber lands have been over-valued, over-capitalized, and most shamefully inflated by some promoter or schemer, whose aims and purposes were to get "on the ground floor," and obtain a goodly slice of the company's stock "gratis" for his services in assisting to gull his confiding friends and that portion of the speculating public who are ever ready to patronize schemes most chimerical. But I dare say, taken on the average, with few exceptions, the enormous sales of Southern timber lands which have been made since 1881 have been based upon an expert and careful estimate of the standing merchantable timber on the lands and upon the intrinsic value of the property. I can bear testimony to the fact that within the past nine years I have invested for foreign and American capitalists, speculators and lumber men over \$5,000,000 in Southern lands and timber, and out of this large aggregate sum there is not a single instance to-day—and I challenge a statement or proof to the contrary—where the purchaser of Southern lands through my office cannot realize in cash a safe and satisfactory profit on his investment. I admit that some of my clients have manufactured some of their magnificent pine into lumber, which has not brought in return the margin of profit hoped for, but it was not chargeable to the timber, but to the unwise and costly methods of manufacturing and the ruinous prices prevailing for lumber.

There has been no boom in Southern timber. The majority of purchases which

have been made were for a "long pull," and were bought with surplus and idle money owned by prudent and far-seeing money-making men. I have recently made a careful research to obtain, in so far as possible, an estimate of the area of Southern timber lands in the hands and under the ownership of men who propose to carry the lands, and are fully able to carry the lands for twenty years, and for lands which were not purchased for development nor for the purpose of immediate lumbering operation, and I have concluded that there are over 5,000,000 acres of Southern pine and cypress and oak timber which are off the market for many years to come, and in the hands of capitalists who will hold them firmly, and can withstand both tempting offers of small profits and the pressure of "tight times."

I may refer to such men as D. A. Blodgett, Hackley & Hume, H. W. Sage, Avery Bros., D. Whitney, Jr., of Michigan, and Calvin Pardee, Chas. W. Henry, William W. Frazier, H. H. Houston, of Pennsylvania, and a host of other such men, who have purchased millions of acres in the aggregate. These men have faith in the ultimate great profits to accrue, and they have the money to carry their timber to this period of profit.

It is an established fact that the man who purchases an article to-day for a resale to-morrow at an advanced price carries within himself the elements of financial destruction, i. e., rash speculation.

This class of land dealings has not prevailed to any great extent in Southern timber lands; the more fascinating and more easily boomed mineral lands have absorbed this line of speculation; consequently there are but few valuable tracts of Southern timber thrown upon the market as the "assets" of exploded boomerangs and speculators.

The great depression in the values of Texas lands is attributed wholly and entirely to the unwise legislation in the "alien-land law" bill. Investors and money lenders have cancelled all agencies throughout Texas, refusing to make further loans on Texas lands so long as this obnoxious law remains upon the statutes of the State. [Since this was written the Supreme Court of Texas has declared the alien-land law unconstitutional.—Editor MANUFACTURERS' RECORD.]

The building of the H. C. A. & N. R. R., or Gould's Railroad, as it is best known, which is a link, or feeder, to the Missouri Pacific system, has developed a great timber, farm and mineral section of Louisiana. This railway extends from Dermott, Ark., to Alexandria, La., passing through an immense belt of hardwood timber and long-leaf pine in Northern and Central Louisiana. It is to be extended later on from Alexandria, La., to Houston, Texas, thus developing the great pineries of Southwest Louisiana and Southeast Texas. Lands along the line of this railway are steadily enhancing in value, several new mills are being erected, numerous towns are projected, and a large influx of settlers, woodsmen, stove-makers and home-seekers are reported along the entire line. In the north central part of Louisiana, tributary to this road, is found rich deposits of kaolin, fire-clay, lignite, sandstone, iron ore and superior marble.

There is considerable prospecting for minerals in North Central Louisiana, and no doubt Louisiana will shortly be classed as a mineral State, thus adding another great resource to her fabulous wealth of timber. I estimate that Louisiana alone has sufficient standing merchantable timber to supply the wants and demands of the American people for ten years. I claim that the white-oak timber in Louisiana is the most valuable to be found in the South. The grain is closer and finer, runs in the more beautiful lines for cabinet work, is tougher and stronger for wagon work or

ship-building purposes, and is better adapted for stave uses.

The next quality of oak grows on the ridges in the State of Mississippi and in parts of Arkansas. The supply of white-oak stumpage is not so large as the accepted estimate; grave errors have been made in the conjectures as to the white-oak supply in the South. Care has not been taken to properly classify the oaks so closely akin to white oak, which are wholly different in quality, such as cow oak, overcup oak and swamp oak, post oak, etc.; these various oaks have been, by conjecture, included in the estimate of Southern white oak. I prophesy that within ten years a choice white-oak tree, well suited for the wants of fancy cabinet work or inside finish, will command a fancy price, and may, in the way of a fancy wood, repeat the old story of black walnut.

Foreign and New England people are looking after the holly stumpage in Louisiana. This timber is used by piano-key and cutlery-handle makers. The Louisiana holly is of superior quality, pure white in grain. The tree often attains 18 to 24 inches in diameter, is short in body, and never more than one log can be cut from the tree. It grows almost exclusively on rich creek-bottom lands, and is in comparative limited supply.

There is some demand for white-ash timber, chiefly from farm-implement and furniture workers. This excellent timber has for years been regarded by the average Southern land owner as valueless, except for fuel. Its intrinsic value has not been known, nor will it be appreciated until the supply has been about exhausted and its value based upon stumpage prices. The extensive development in the manufacturing of Southern cypress gives assurance that this specific timber is to play a very important part in the future lumber industry of the South. There are many large mills engaged in sawing cypress in Louisiana, Mississippi, Arkansas, Florida, Alabama and South Carolina, and I hear of others approaching rapid completion. The cypress in Louisiana is the famous "red," with thin sap, suitable for all purposes. South Carolina, Florida and a part of Georgia contain also a large area of good cypress, and there is in sight a sufficient area of cypress timber to supply the demands of trade for 30 years. There is but limited demand for sweet and red gum, but I anticipate this excellent timber will at no distant period prove to be most desirable and valuable, and will be accepted as a favorite quality of lumber in the manufacture of furniture. It is even now stated that gum cross-ties for railways are in great favor. They are durable, do not warp, are capable of hard usage, resist great strain and weight pressure, and hold the spike with great tenacity.

The long-leaf-pine timber in the South is of great importance to the trade, and one on which no two people agree as to the approximate or possible estimate of amount. Suffice it to say the South has an immense area of this magnificent timber sufficient to supply the American trade from 15 to 20 years, but how much of this vast area is in the hand of capital is a very important factor to be considered in the future calculation of consumption and price.

These capitalists do not propose to sacrifice their pine for a small profit, thus forcing the consuming mill man to go back a greater distance from the railways and watercourses to obtain their supply of pine timber, and all of this will add to the cost of lumber production. The cost of extension of tram-roads must be added to the cost of logs and lumber, and these extra and additional costs are important factors in the production and consumption of lumber. I apprehend in the near future a sharp advance in the value of pine stumpage nearby railways, as the stumpage so situated owned by the mill men has

been cut and manufactured, and the uncut stumpage along the watercourses and railways in the South is in the grasp of capital and not to be flitted away for a song. This is an important fact not to be overlooked or disregarded by the mill man in his eagerness to manufacture his stumpage for the narrow margin now so prevalent in the lumber trade.

I see no reason for altering my views on the subject of the yellow-pine-stumpage supply in the South from those stated by me in the MANUFACTURERS' RECORD in January, 1889.

There is too much waste, too much turpentine, too much wholesale destruction of our pine forest South. It is unwise.

It can be safely urged upon the prudent and conservative investor, and upon the small land and timber owner, the importance of holding firmly to their pine timber; it is good property; sure for a large profit; is better than government bonds, and will be for their children a legacy of wealth.

In discussing railroad matters the Wilmington (N. C.) Star says: "This would seem to indicate that the railroads are not the grinding monopolies they are represented to be by some of the modern statesmen who think they have a mission in this world, and that it is to fight railroads. To hear some of them talk, one might come to the conclusion that the railroads are a grinding monopoly and unmitigated nuisance, and the sooner we dispensed with them and returned to the old dirt road, the stage-coach and wagon-train the better, but when he turned and took a glance at the four States referred to in these railroad statistics, saw the mighty development going on, the mines opened, new furnaces established, manufacturing towns growing up and the scores of new industries of various kinds established, the increase of business and the increase of wealth, he would have to come to the conclusion that the railroads, instead of being of no use, are of great use and are doing much more than they are getting credit for. It is certain that without the co-operation of the railroads there would have been no such development and splendid progress in the Southern States as has been witnessed in the past ten years."

If any of the readers of the MANUFACTURERS' RECORD want to know of a charming hotel in the Piedmont region of South Carolina, where the climate is probably as near perfect as can be found—a hotel well-built, attractively-furnished, perfect in its cuisine—they are advised to write to "The Cherokee Inn," Blacksburg, S. C., for circulars presenting the attractions of that house. The MANUFACTURERS' RECORD has heard a great deal about this house, and every word has been in the highest praise. "It seemed like Heaven," said a Northern capitalist to the writer a few days ago, "when I accidentally stopped at the Cherokee Inn after roughing it for some weeks at some of the uncomfortable country town hotels in that section while investigating the mineral resources of that region." For health or pleasure Blacksburg offers many attractions, and the Inn is now pretty well filled with Northern visitors who are spending the winter there. The MANUFACTURERS' RECORD commends this Inn because the South needs just such hotels, and because every man who builds and runs such a hotel in the South is doing even more for the prosperity of this section than if he had invested the same amount of money in a manufacturing enterprise. Hotels like this are badly needed. They draw visitors South, and these visitors often become permanent residents and large investors in local enterprises. It also commends it because it offers to many Northern people whose ill health necessitates a change of climate, the comforts of a very attractive hotel managed by people who fully understand how to supply the needs of the inner man, and who do not think that the climate alone, however perfect, is the only thing needed by winter visitors to the South.

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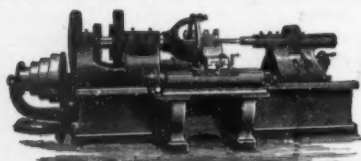
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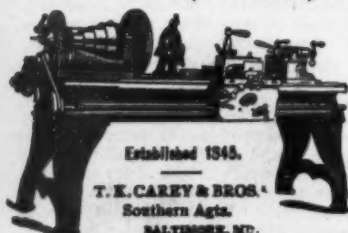
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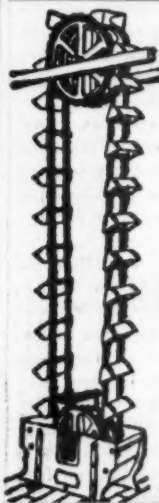
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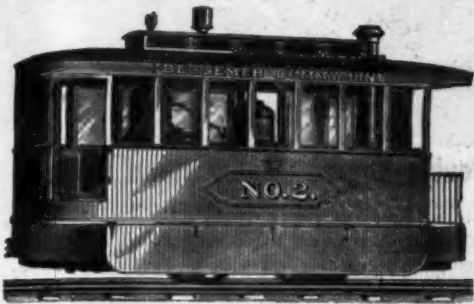
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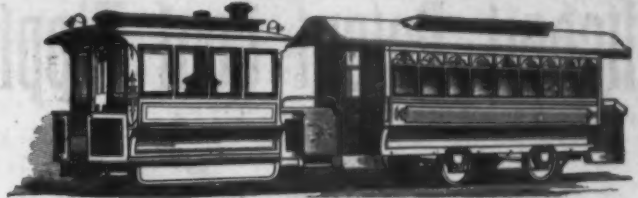
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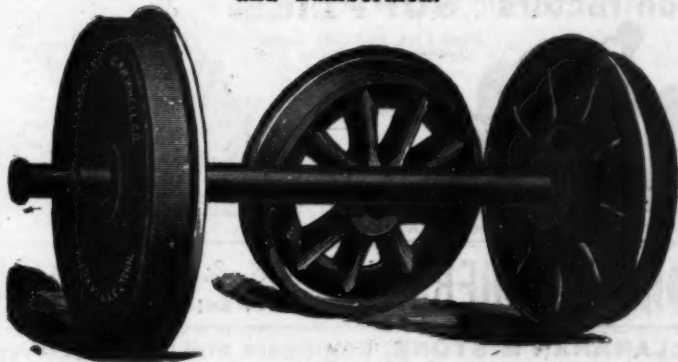
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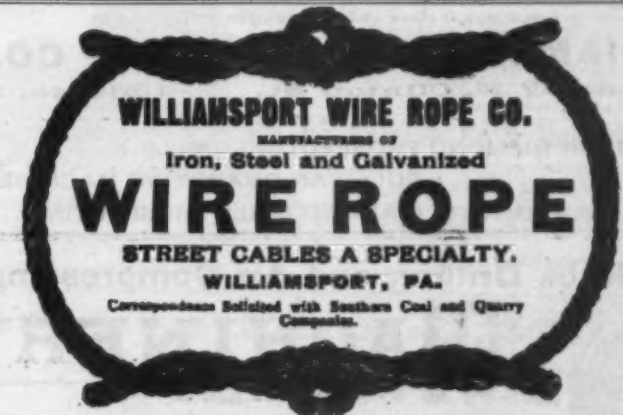


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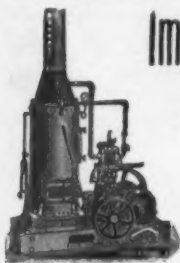
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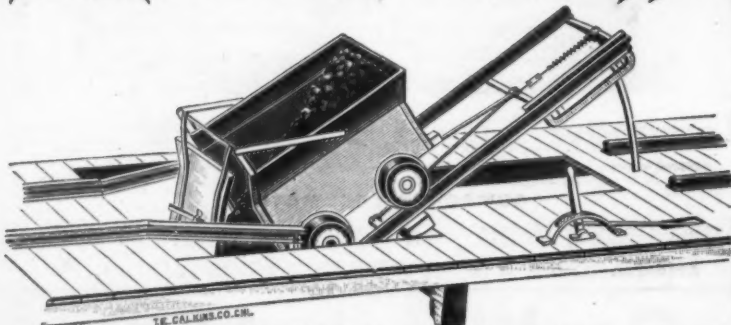
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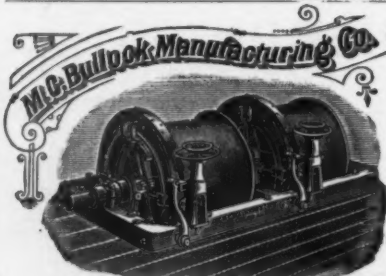
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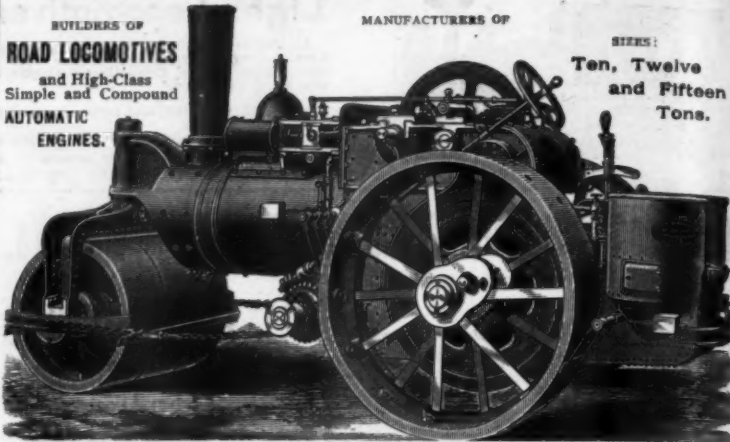
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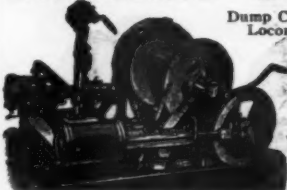
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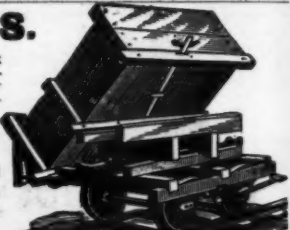


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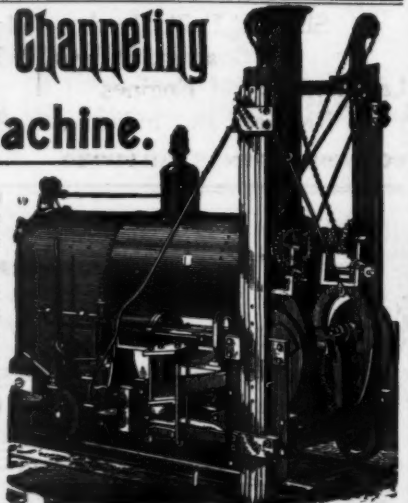
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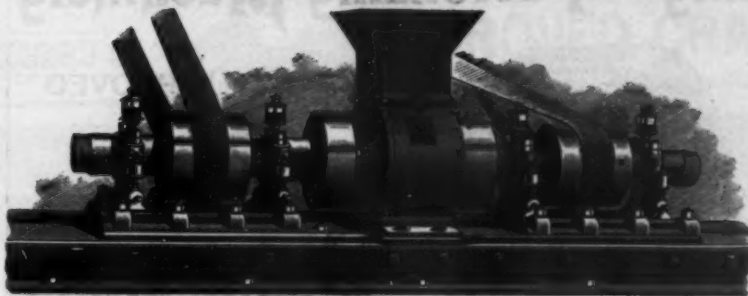


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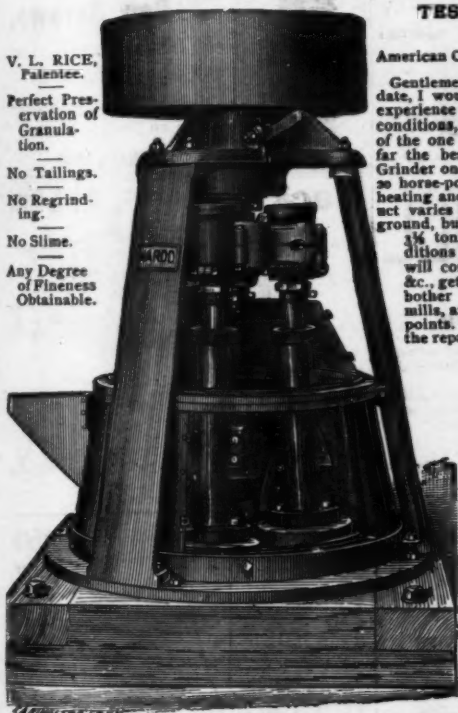
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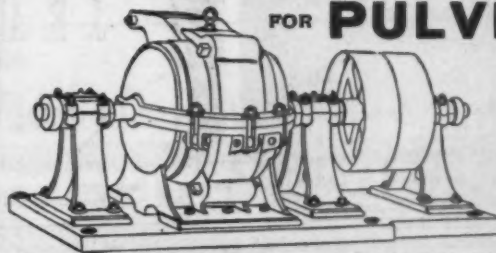
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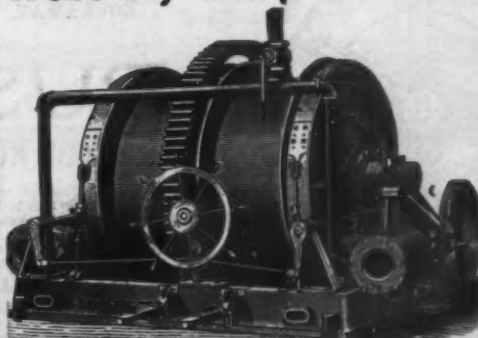
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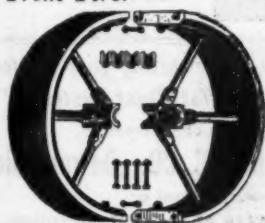
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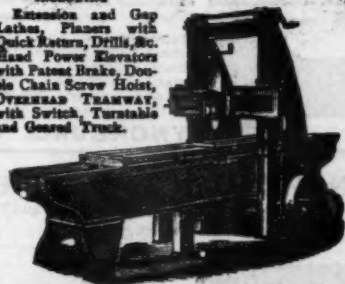
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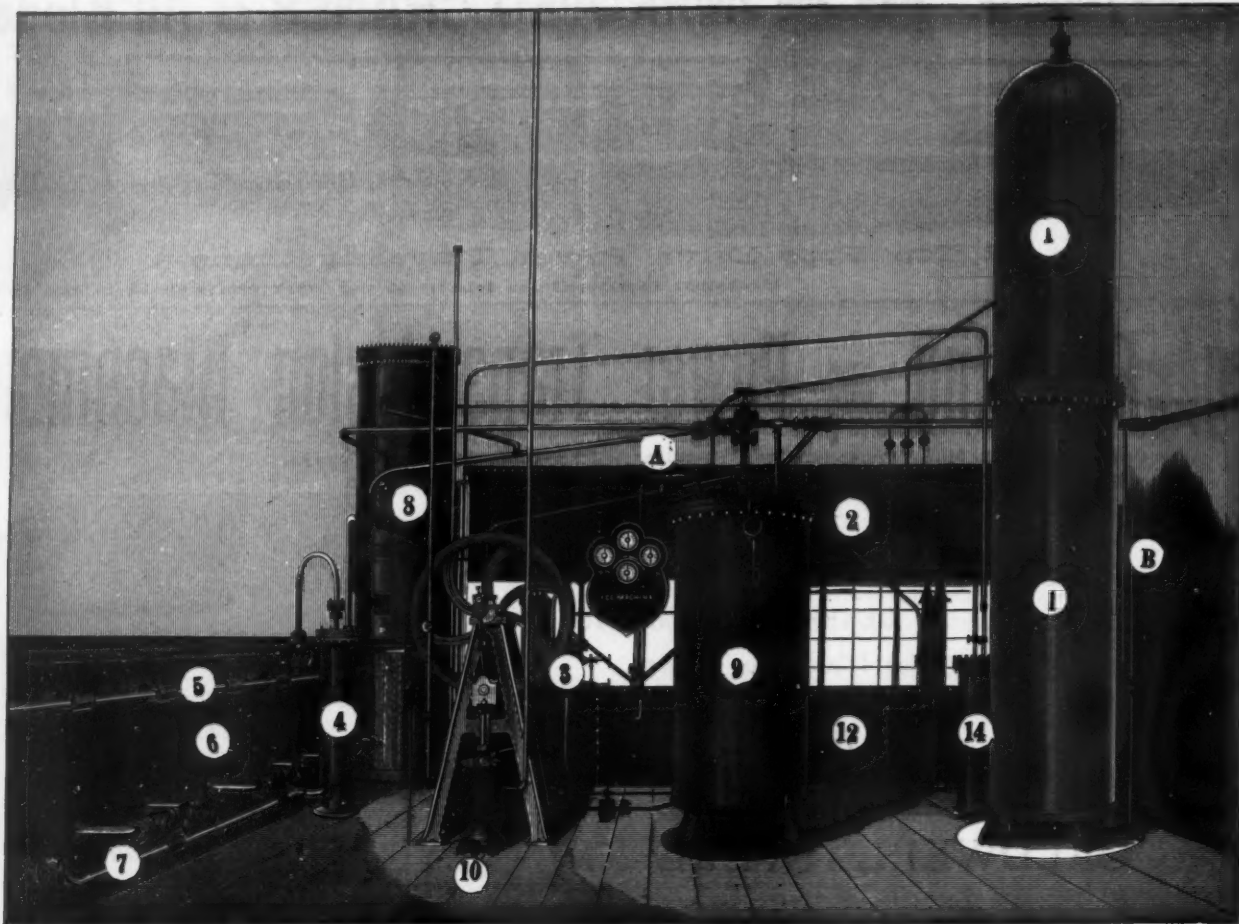
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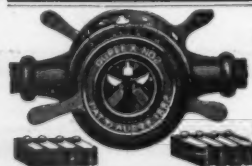
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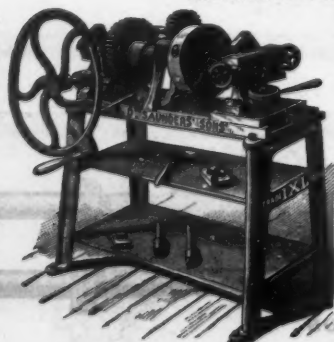
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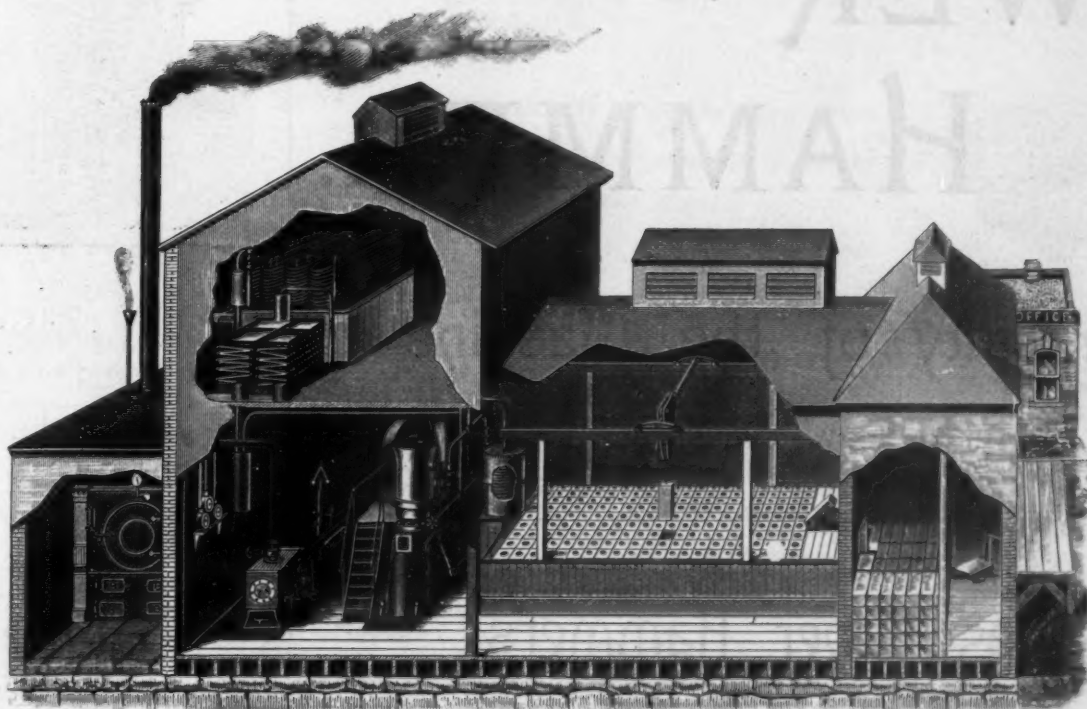
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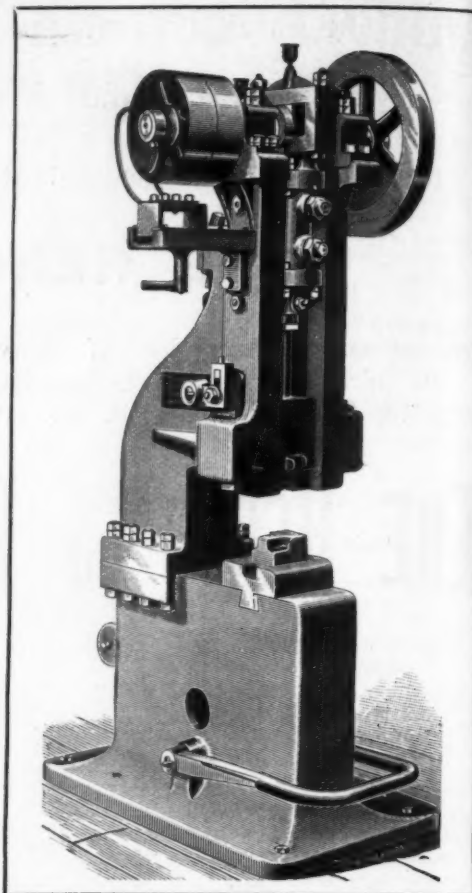
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We respectfully refer to the following Certificates, which are only a few among the many in our possession, which speak volumes in favor of this Metal, and are from the owners of every class of machinery, and from the ablest mechanical talent in the United States.

This Metal is fast supplanting all grades of Babbitt Metal, and is becoming the Standard American Metal.

DWIGHT MANUFACTURING CO.,
CHICOPEE, MASS., April 9, 1888.

In reply to your inquiry as to how I find the American Improved Anti-Friction Metal, I will say that I am very highly pleased with it in every respect. I have delayed until this time to reply in order that I could thoroughly test it in a place where we have never had lining metal of any kind to answer our purpose. The shaft runs 300 revolutions per minute, and I transmit with a steel shaft of 350 horse-power. The belt is now run quite snug, and I find from the day I put in your metal until now that I have not even had it to get blood-warm. My master mechanic says that it is "bang up," and for the future I shall adopt it and use no other.

J. W. CRUNNOCK, Agent Chicopee Mfg. Co.

OFFICE MICHAEL COLLINS WOOLEN MILLS,
COLLINSVILLE, MASS., November 14, 1887.

In reply to yours of the 11th inst. asking my candid opinion of the American Improved Anti-Friction Metal, I will state that I was troubled for about two years with a journal that continually annoyed me until I procured the above metal. Since then everything goes smoothly, and I find the journal does not heat, being perfectly cool at all times. I therefore unhesitatingly recommend it to do all that is claimed for it. Respectfully yours,

MICHAEL COLLINS.

OFFICE L. M. RUMSEY MFG. CO.,
ST. LOUIS, MO.

We have used many thousand pounds of the American Improved Anti-Friction Metal, and we have never had a complaint from anyone to whom we have sold it. Many of our customers recommend it very highly. We believe that it will give better results than any metal on the market.

L. M. RUMSEY MFG CO.

OFFICE ST. LOUIS CABLE & WESTERN
RAILWAY CO.

We are using the American Improved Anti-Friction Metal on our road, and regard it the best we have ever found. We are using it with success in our sheaves, which is one of the most severe tests that it can possibly be put to as to durability. We find its lubricating properties most excellent and unsurpassed by any we have ever used.

M. A. SHIPLEY, Superintendent.

FULTON IRON WORKS,
SAN FRANCISCO, CAL., June 17, 1889.

We have during the past year been using the American Improved Anti-Friction Metal and have put it into bearings requiring the best metal that could be obtained with the utmost satisfaction. We recently used it in the bearings of a line of 6½-inch shafting making 350 revolutions per minute, transmitting 650 horse-power, in the

California Electric Light Works of this city, and it has run from the start without heating. A metal that will do this must be good, and we can confidently recommend it where such severe duty is required. We are,

Respectfully yours, HINCKLEY, SPIERS & HAYES.

BERNARD & LEAS MFG. CO.,
Manuf'rs of Special Milling and Elevator Machinery,
MOLINO, ILL., December 31, 1888.

I have been using the American Improved Anti-Friction Metal in our fast-running boxes, and would not be without it in the shop. It is the best Babbitt that I ever saw. Cannot say too much for it.

GEO. F. DOWN, Supt. Iron Departm't

SANTA FE PLANING MILLS,
HOUSTON, TEXAS, December 26, 1887.

The metal gives perfect satisfaction. Like it so much that we will use no other. Our machines are all high speed, and nothing but best of anti-friction will stand.

Yours truly, A. S. HALL, Proprietor.

INDIANAPOLIS, IND., February 28, 1888.

We have been using your metal for the past six months and find it the best we have tried, and it does all you claim for it. We shall adopt for future use.

Yours respectfully, SKINNER, DAVIS & CO.,
Iron Founders and Machinists.

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- BECAUSE They will run with less power than any other Saw made.
- BECAUSE We purchase only the very best Saw material that can be made.
- BECAUSE We test every blade before shipment, and guarantee every Saw as represented.
- BECAUSE Our facilities and system in factory are such that we produce nothing but best quality at moderate prices.
- BECAUSE We manufacture largely and buy our Saw material of original manufacturers or first hands, consequently can sell as cheap as any first-class manufacturer.
- BECAUSE All our Saws are highly finished, mechanical in design, and we guarantee them to perform the duties (whether for steam or friction feed) for which they are ordered.

GEORGE M. BRINSON,
MANUFACTURER OF LUMBER.

Telegraph Station, Millen, Ga.

STILLMORE, GA., December 10th, 1891.
SOUTHERN SAW MFG. CO., (Ohlen & Chaffee)
Atlanta, Ga.

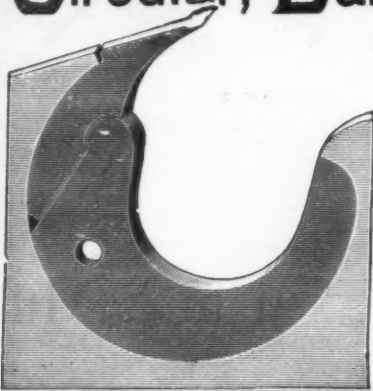
DEAR SIRS—I write to know when I may expect the two saws recently ordered of you. Two 56" saws, 6 gauge straight, with 80 teeth, for a speed of 750 revolutions per minute. The two similar ones, about which I wrote you a few days ago, are still performing splendidly, in fact, at this writing, we have never had saws run so satisfactorily. In a large mill like mine, it is almost always necessary to hammer new saws a little when subjected to severe strain at first, but these first two, which are now running, and which you made for us, went on and ran cool from the first, making true lumber, and standing the heaviest feed we have ever seen cut in hard pine (carriage driven by Filer & Stowell 12x20 twin engine feed). You can refer to me confidentially as to the merits of your work, for we consider the Southern Saw Mfg. Co.'s saws equal, if not superior, to any saws made, in fact, they are the best we ever run, and we have run all of the principal makes. With best wishes for your continued good work and prosperity, I am,

Yours truly,
(Signed) GEORGE M. BRINSON.

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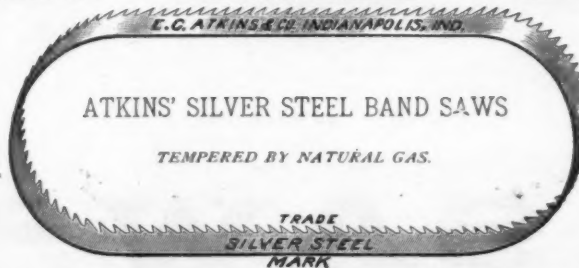
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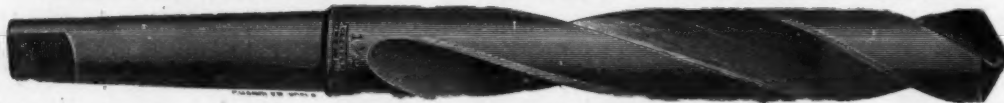
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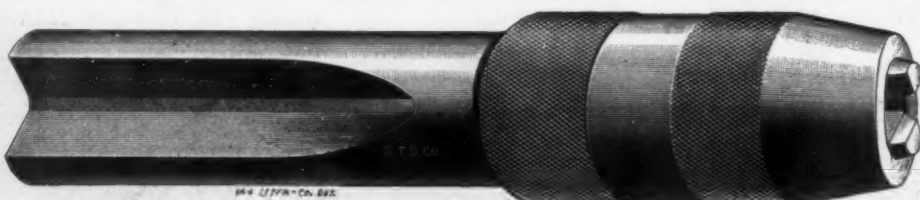
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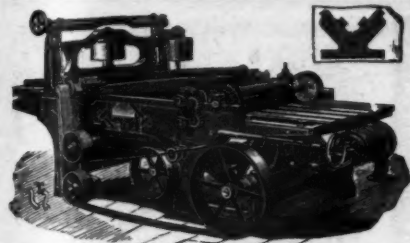
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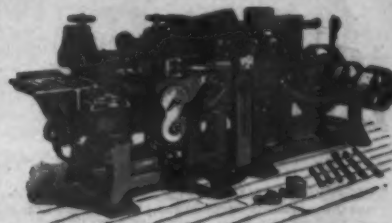
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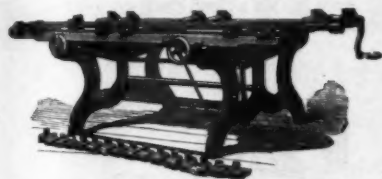
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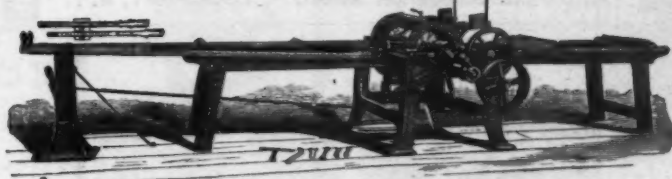
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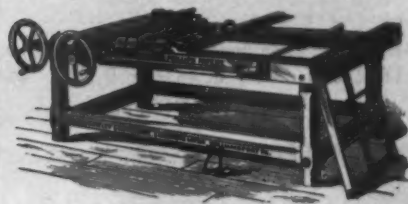
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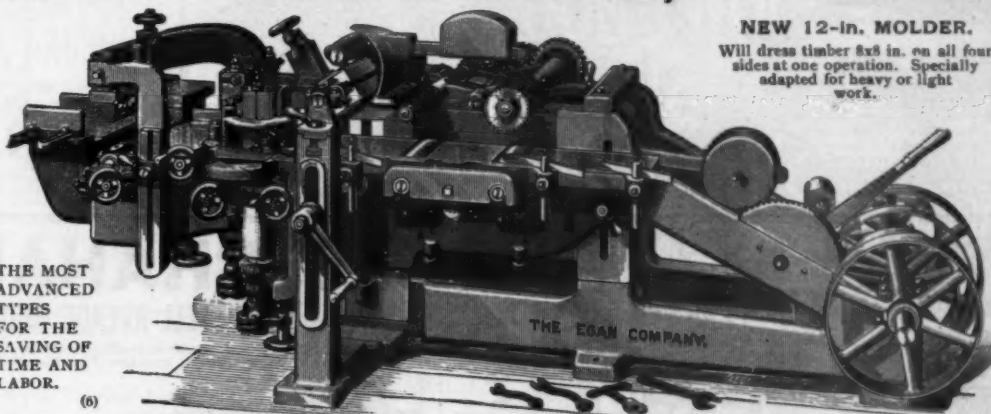
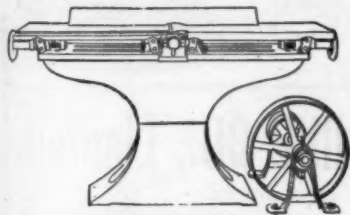
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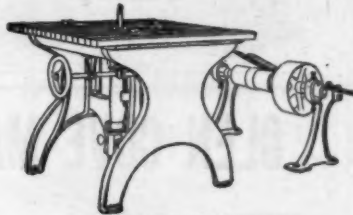
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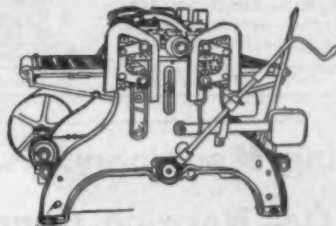
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Will dress timber 8x8 in. on all four
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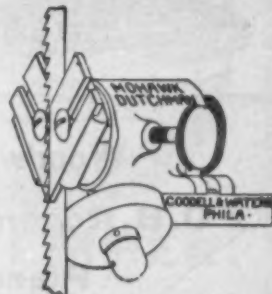
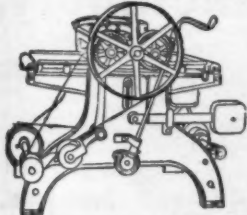
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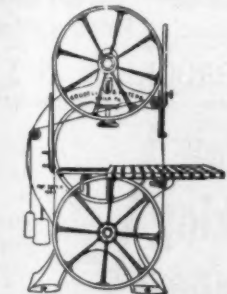
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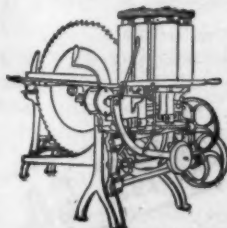
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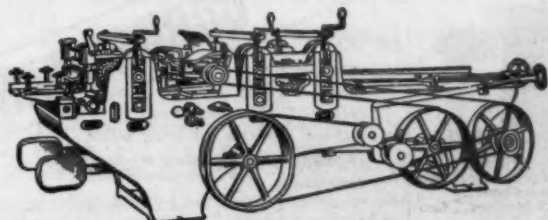
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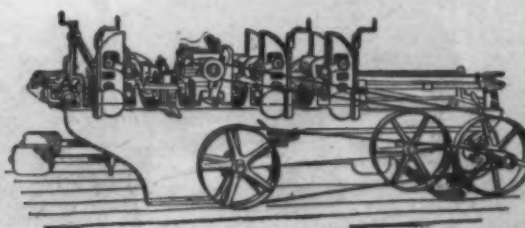
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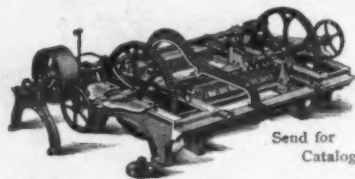
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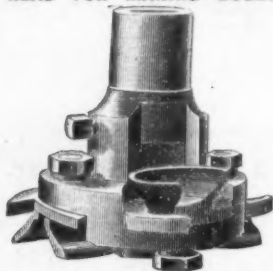
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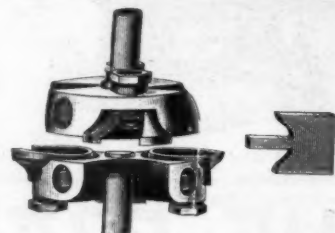
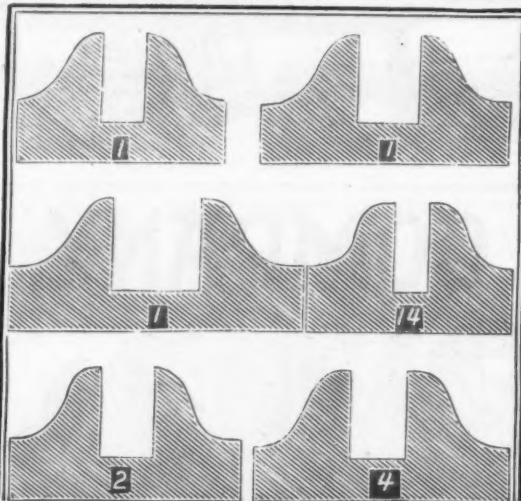
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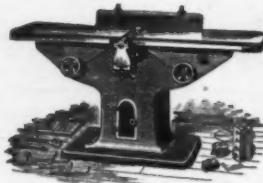
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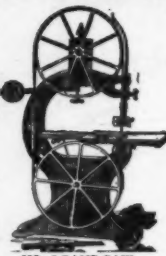
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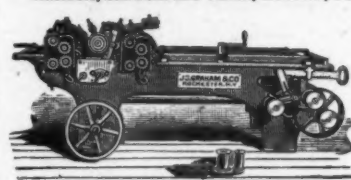


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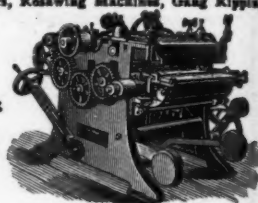
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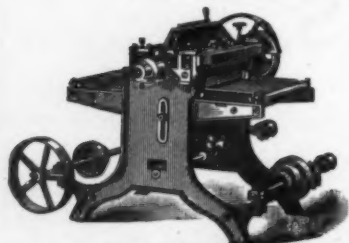


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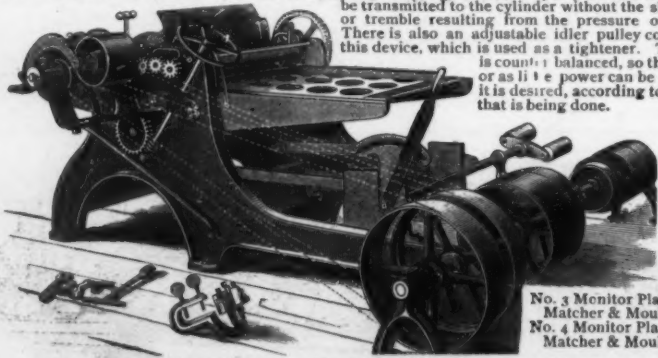


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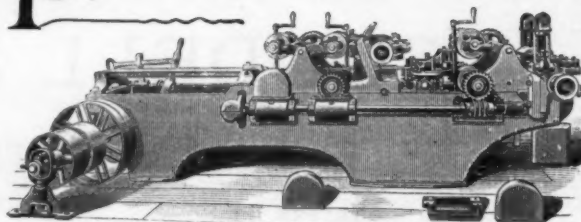
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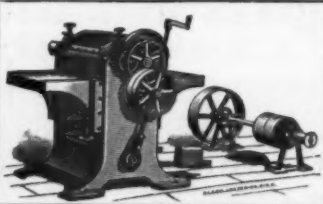


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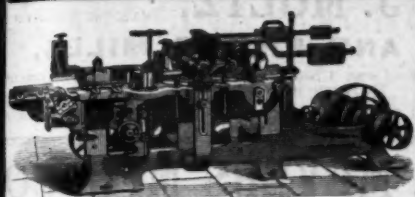
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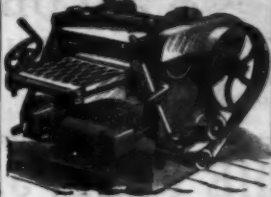
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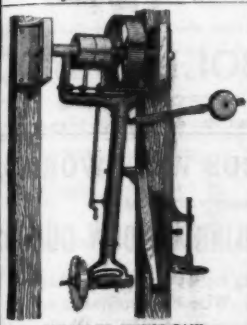
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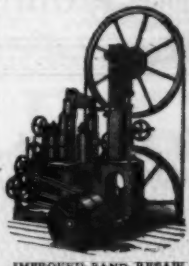
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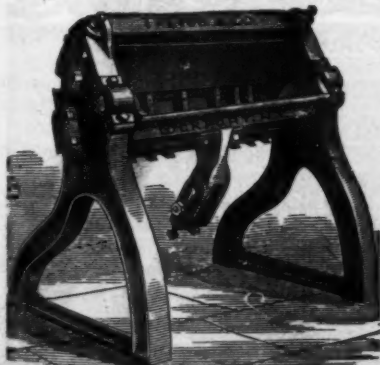
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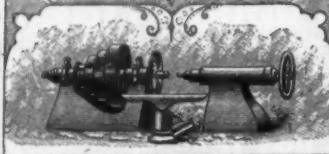
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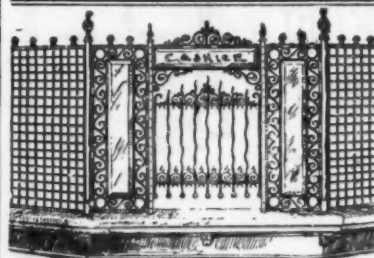
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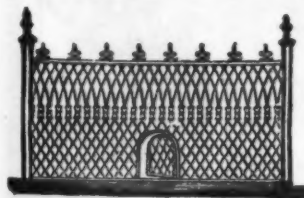
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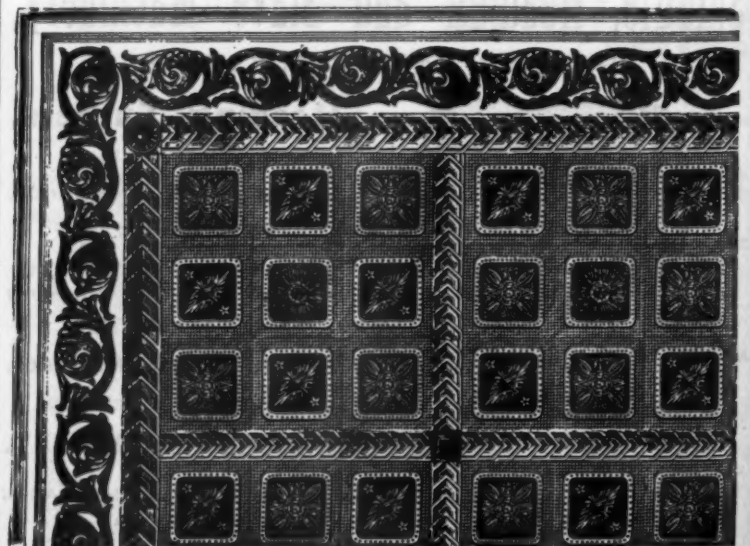
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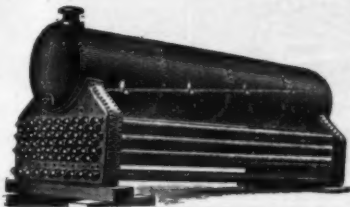
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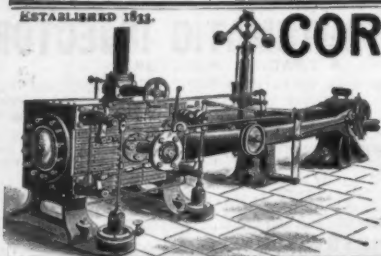
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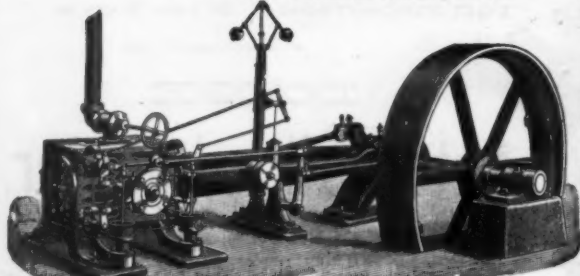
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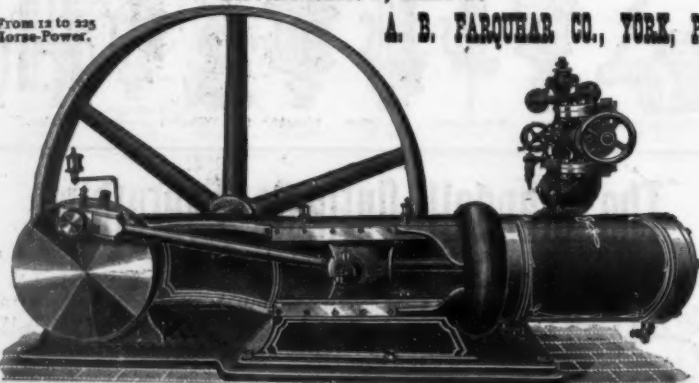
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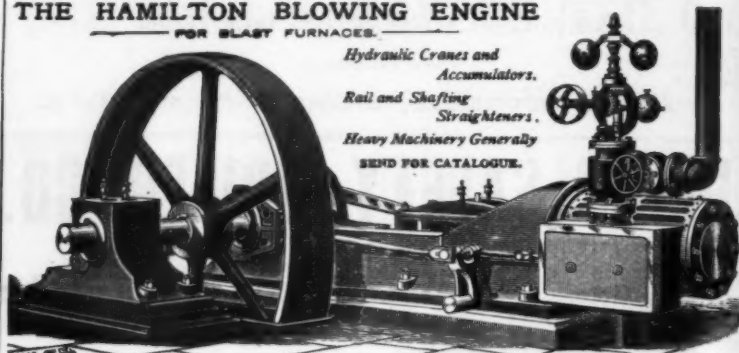
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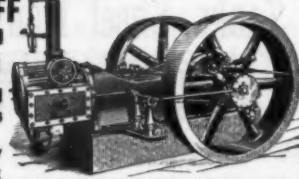
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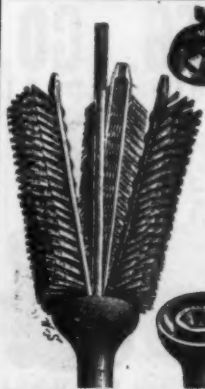
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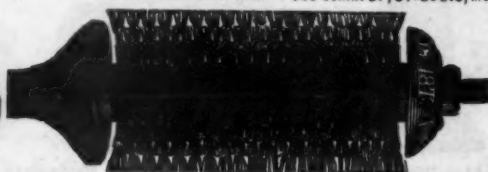
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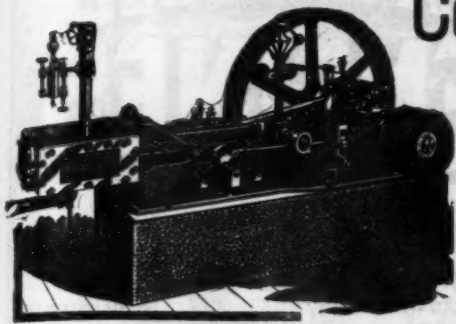
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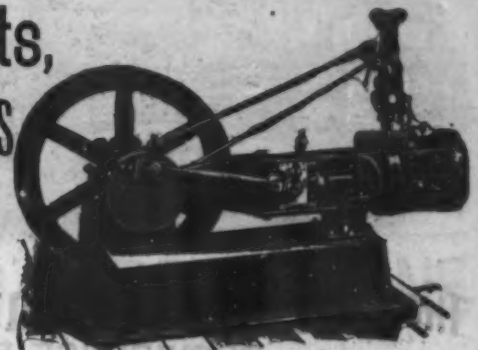
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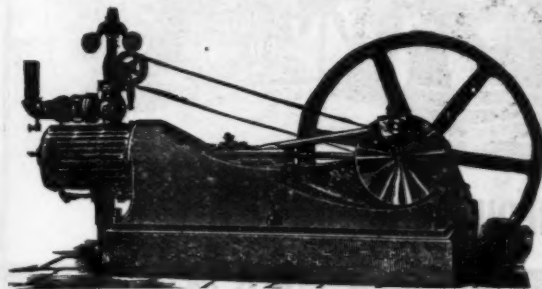
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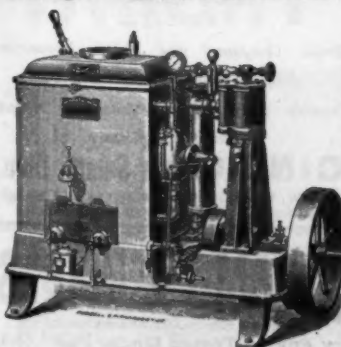
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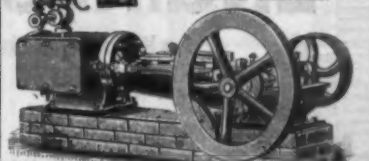
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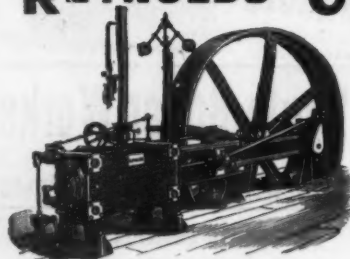
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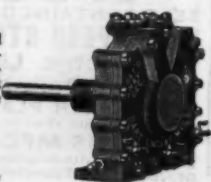
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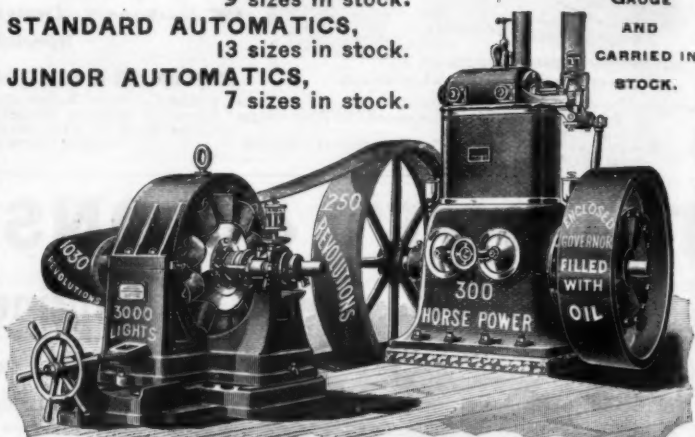
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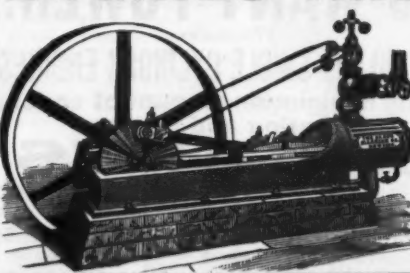
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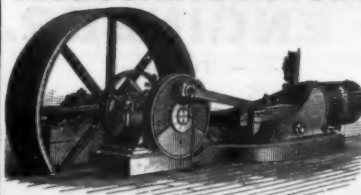
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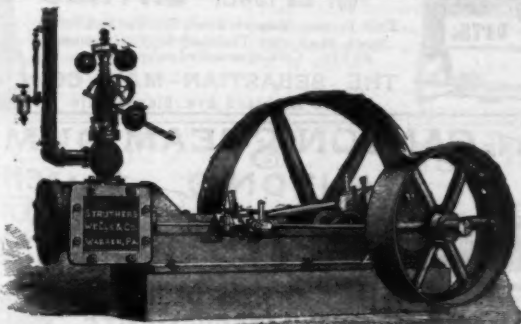
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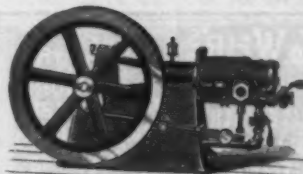
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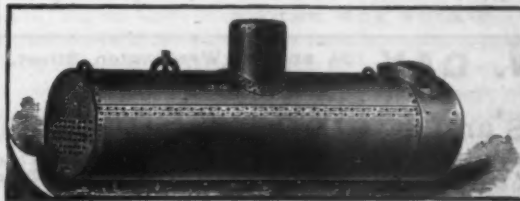
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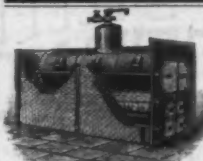
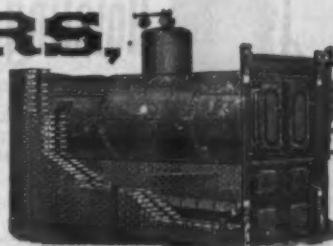
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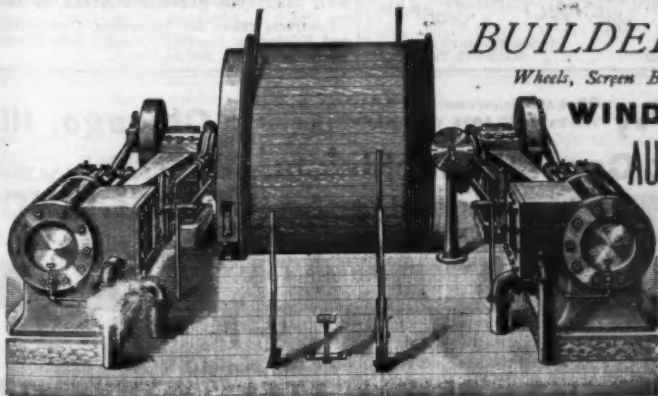
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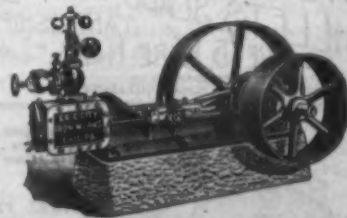
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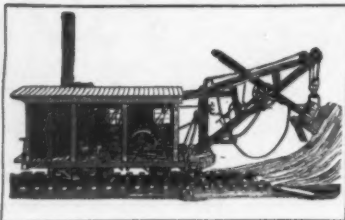
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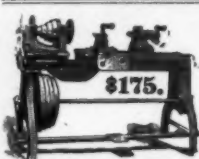
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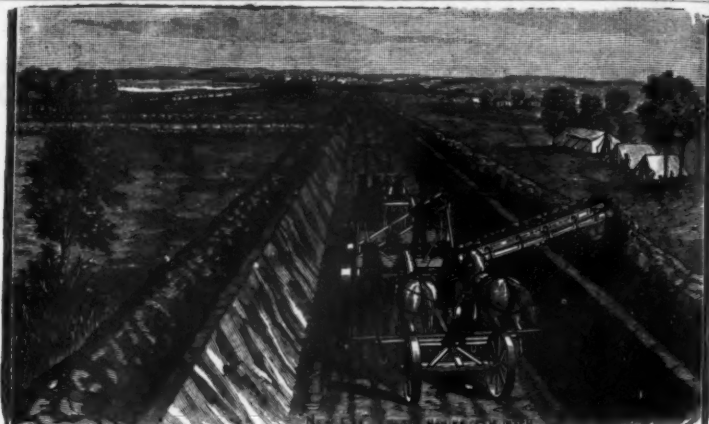
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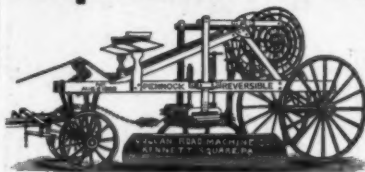
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Railroad Construction

Atlanta, Ga.—Electrical Railroad.—The Short Electric Railway Co., of Cleveland, Ohio, contractor for building the 15-mile electrical railroad of the Atlanta & Chattahoochee River Railroad Co., will, it is expected, have the road completed by February 15. The estimated cost is \$175,000.

Atlanta, Ga.—Electrical Tram road.—The Georgia Electric Light Co. has been granted the right to build and operate an electrical tram-road.

Bartow, Fla.—Railroad.—O. M. Crosby, of Avon Park, reports that W. H. Adams, of New York city, is organizing a company to build a railroad from Bartow via Homeland and Midland to Avon Park, a distance of 35 miles. It is expected to commence construction this month. This is the Florida Phosphate Railway lately referred to.

Bishopville, S. C.—Railroad.—The bill lately reported as introduced in the legislature to change the name of the Bishopville Railroad Co. to the South & North Carolina Railroad Co. and granting it authority to extend its line, has been ratified and is now a law.

Bristol, Tenn.—Railroad.—John H. Caldwell, vice-president Bristol, Elizabethton & North Carolina Railway, writes that Swafford Bros. have contract for portion of the line between Bristol and Elizabethton, and are now at work on same.

Charleston, W. Va.—Railroad.—F. W. Abney, president Charleston, Clendennin & Sutton Railroad Co., referred to in last issue, states that the company has not yet let to contract any part of the road, and does not expect to for a month or more.

Columbia, S. C.—Railroads.—Bills incorporating the following companies, having passed the legislature and been ratified, are now laws: Sutherland Railroad Co.; Orangeburg Railroad Co.; Wilmington, Norfolk & Charleston Railroad Co.; Augusta, Aiken & Sumter Railway Co.; Gaffney City Railway Co.; Spartanburg Belt Electric Railway Co.; Sumter, Lake City & Conway Railway Co.; Catawba Falls Railroad Co.; Florida, Georgia & Carolina Railroad Co.; Charleston, Batesburg & Western Railroad Co.; Hampton & Branchville Railroad & Lumber Co.; Charleston, Colleton & Berkeley Railroad Co.; Barnwell Street Railway & Real Estate Co., and the Walterboro, Summerville & Otranto Railroad Co. These companies have all been previously reported in the MANUFACTURERS' RECORD.

Columbia, S. C.—Railroad.—Messrs. McCabe and Noble, railroad contractors, who built part of the South Bound Railroad, will, it is stated, endeavor to secure funds from European capitalists for the construction of a railroad from Columbia to Monroe. This line is understood to be an extension of the South Bound Road.

Fordsville, Ky.—Railroad.—M. B. Mann, of Owensboro, general manager of the Owensboro, Falls of Rough & Green River Railroad, has made a reconnaissance of the country from Fordsville to Caneyville with a view to selecting a route for the proposed extension of his road. The right of way is being arranged for, and it is probable that construction will begin early in the spring.

Irvine, Ky.—Railroad Bridge.—Bennett H. Young, of Louisville, has, it is stated, taken the contract to build the bridge lately mentioned for the Richmond, Nicholasville, Irvine & Beattyville Railroad across the Kentucky river at Irvine.

Jennings, La.—Railroad.—The Kansas City, Watkins & Gulf Railroad Co. (office, Lawrence, Kans.) will, it is stated, build a branch road from Jennings to Lake Arthur, a distance of 10 miles.

Knoxville, Tenn.—Dummy Line.—The Fountain City Railroad Co., lately mentioned, will extend its dummy line 2 miles.

Lacoochee, Fla.—Railroad.—The Withlacoochee & Gulf Railroad Co. has been chartered by Charles G. Wilson, J. M. Baker and J. C. Priest to build a railroad from Lacoochee to a point on the Florida Southern Railway west of the Withlacoochee river, a distance of 50 miles.

Low Moor, Va.—The contractors for double-tracking the Chesapeake & Ohio Railroad (office, Richmond) from Low Moor to Covington, mentioned in last issue, are: Gooch & Waugh, 2 miles; Dickinson & Carpenter, 4 miles, and Rhinehart & Sons, 4 miles.

Macon, Ga.—Railroad.—The Macon & Indian Spring Electrical Railroad Co., chartered at the last session of the legislature, will shortly commence surveying its road. Two routes will be surveyed, one an air line from Macon to Indian Springs, a distance of 31 miles, and the other a route 6 or 8 miles longer. T. J. Carling is president of the company, and can give particulars.

Mineral City, Va.—Railroad.—The Virginia Pyrites Co., referred to in last issue, will build a railroad from its mineral property to a connection with the Chesapeake & Ohio Railroad.

Montgomery, Ala.—Railroad.—T. J. Adams has secured contract to grade the first 10 miles of the Alabama Grand Trunk Railroad, and is to complete same by May 1. The road is projected from Montgomery to Round Mountain, on the Chattanooga Southern Railroad, and arrangements will

probably be made for building the road from Montgomery to Equality, a distance of 30 miles.

New Castle, Va.—Railroad.—R. H. Adams, of Radford; H. D. Ribble, of Blacksburg; J. W. Marshall, of New Castle; Decatur Axtell, of Richmond, and others are the incorporators of the Southwest Virginia Central Railroad Co., mentioned in last issue as applying to the legislature for a charter with authority to build a railroad through any or all of the counties of Craig, Botetourt, Roanoke, Montgomery and Pulaski.

Portsmouth, Va.—Electrical Railroad.—The Port Norfolk Electric Railway Co., lately mentioned, hopes to begin the construction of its electrical railroad within a few days. Address M. W. Mason, Norfolk, for particulars.

Prairie Grove, Ark.—Railroad.—The town has raised \$10,000, and proposes increasing this amount for the purpose of inducing some company to build a railroad from Fayetteville or some other point on the St. Louis & San Francisco Railroad to Prairie Grove. It is expected that other points along the route would further augment the bonus to a total of \$25,000. E. G. McCormick, of Prairie Grove, can be addressed.

Savannah, Ga.—Railroad.—The South Bound Railroad, lately reported as to be completed to Savannah, is constructed to within 4 miles of that city. George D. Wadley is chief engineer.

Shelbyville, Tenn.—Railroad.—Frank F. Ross, of Nashville, has commenced the preliminary survey of the proposed Shelbyville, Nashville & Northern Railroad. The projected route is from Shelbyville via Nolensville and other points to Nashville, a distance of 46 miles. T. Ford is president of the company.

Staunton, Va.—Railroad.—The county of Highland has granted to the Augusta, Highland & Alleghany Railroad Co. a right of way over the Staunton and Parkersburg turnpike from Staunton to Monterey for the railroad lately mentioned. An effort is being made to obtain right of way from the supervisors of Augusta county. The distance is 46 miles, and the estimated cost of construction is \$540,000. W. D. Rippeffe, of Buffalo Gap, Va., is the originator of the project, and claims to have secured ample capital for carrying it out.

Sulphur Springs, Texas.—Railroad.—The Kansas City, Fort Smith & Southern Railroad Co. (office, Neosho, Mo.) will, it is stated, soon place an engineering corps in the field to survey a route from Sulphur Springs via Siloam Springs to Fort Smith, and another via Bentonville to Fort Smith. The distance from Sulphur Springs to Fort Smith is about 108 miles, and it is said to be the company's intention to build this line during 1892.

Sumter, S. C.—Railroad.—The bill lately reported as introduced in the legislature, chartering the Sumter, Lake City & Conway Railroad Co., has been ratified and become a law. The company will organize at an early date and commence the construction of its road.

Tampa, Fla.—Electrical Railroad.—An Omaha (Neb.) party is reported as considering the construction of an electrical railroad in Tampa.

Wilmington, N. C.—Electrical Railroad.—A New York syndicate has completed the purchase of the Wilmington Street Railway through its representatives, J. H. Barnard, of Asheville, and E. L. Hawks, of Winston. The work of changing the road to the electric system will be pushed to an early completion.

We alluded in a recent issue to the prosperous business enjoyed by the J. R. Alsing Co., 60 62 New street, New York city, and in mentioning the success of a new machine being introduced by this concern it was inadvertently called the "large disintegrator." This should have read the "Cage" disintegrator. The machine is widely used in the cement and phosphate trade, and finds an extensive market in the South.

In the new Catholic cathedral at Davenport, Iowa, are four windows 24 feet high by 14 feet wide, besides 100 smaller windows. The work of covering these with wire window guards for protection of the ornamental stained glass is now being done by E. T. Barnum, manufacturer of wire and iron work, Detroit, Mich.

THE handsomest 1892 calendar we have received is from the Ashton Value Co., 271 Franklin street, Boston.

WINTER TOURIST RATES.—The Missouri Pacific Railway and Iron Mountain Route have placed on sale Winter Tourist Tickets to points in Texas, Mexico, Arizona and California at greatly reduced rates. Stop overs will be allowed in the States of Arkansas and Texas. For tickets and further information address Company's Agents, or H. C. Townsend, G. P. A., St. Louis, Mo.

BRIGHT FINANCIAL PROSPECTS

What Leading Bankers Say of the Outlook.

MANHATTAN TRUST CO.,
NEW YORK, December 28, 1891.

Editor Manufacturers' Record:

In reply to your inquiry regarding the general business outlook for 1892, you, of course, recognize and give full weight to the prosperity which will come from our great grain crop, already marked by the largest recorded exports in our history, for which we are receiving payment not only in merchandise, but gold and securities.

The real improvement resulting from this addition to our wealth is shown in the payment of the interest, and in many instances the principal, of those Western farm mortgages, which, as you are aware, have during previous years been in a precarious condition. It is also shown in the increased bank reserves of the Western institutions, which for the first time in the history of the national banking system have reached, and even succeeded, the reserves of the Eastern cities. New York also now begins to feel this accumulation of money, the bank statement of the past week showing the largest deposits on record (\$455,000,000), with a corresponding reserve (\$36,000,000) in excess of the legal requirement.

This accumulation of money, however, indicates a danger also; the absence of any method of retirement of the circulation when it is not wanted; the lack of "elasticity" in our circulating medium. Money, as economists have shown us for a hundred years, is not true wealth, but only the vehicle of business—the carts and wagons of trade. But the simile must not lead us astray, for while the wagons may stand idle, accumulated dollars in the banks are in constant competition for business, until usually prices make a load big enough to employ them all. I say "usually," for at one period before resumption, namely, after the shock of the panic of 1873, an increase of greenbacks did not, as everybody expected, improve prices; "inflation did not inflate."

If we are wise we shall not permit this excessive accumulation of money to disturb values now, for with a sound financial system nothing can prevent this country from soon taking the lead of the world in business and finance, and America will hold the sceptre of commercial supremacy.

FRANCIS ORMOND FRENCH, Pres.

MERCANTILE NATIONAL BANK,
NEW YORK, December 29, 1891.

Editor Manufacturers' Record:

The business outlook for 1892 appears to me very bright. Circumstances which, taken together, are unusual, seem to warrant the expectation of fully average prosperity more than ordinarily well distributed throughout all sections.

Widespread foreign demand for our food supplies has found us with a season's yield reported extraordinary in quantity and in excellence of quality. Prices have not seemed to feel this influence of abundant markets, however. Stringent money markets, insufficient storage capacity near home and inadequate facilities for transportation to the seaboard have combined to moderate and sometimes to depress the prices which our producers could obtain.

Cotton, too, has been disappointing to producers thus far, but its distinguishing feature this season being its uniformly high quality, net returns in money to the planter cannot come much, if any, short of last year. Cotton has been forced upon unwilling markets, foreign and domestic. Timidity in financial circles abroad, stringent money markets at home, free deliveries of early pickings threatening superfluous supplies, all together account for current prices. Diminishing receipts are long would put another aspect upon the situation, and the occurrence would

not occasion me surprise. It may be wise, as has been suggested, to reduce the acreage in cotton for the coming season. If it mean an increased raising of food supplies for home consumption it will be wise undoubtedly. If the scheme involve a covenant among planters to reduce the acreage in cotton, as recently proposed, the achievement may remind us of the forty thrifty farmers committed to bring a gallon each of cider to their picnic. In different well water trickled from the spigot when they came to seek refreshment at the common vat.

Conditions in the iron market are usually regarded noteworthy. Of late the reports proclaim a firmer demand for bar and manufactured iron, and a shade higher prices in particular lines. The New York Stock Exchange has "caught on," and "Wall street" anticipates the future in a temper that is propitious. Every developing influence toward improvement will feel its impulse as a stimulant to progress everywhere.

The makeup of the committees of the new House of Representatives is excellent from a banker's point of view. We are thereby assured against tariff-tinkering for merely partisan-political effect. The merchant and manufacturer are, therefore, not to be kept depressingly anxious all the season. Ordinary currents of business are not to be disturbed. We are but slightly less well-assured thereby of the restoration of the coinage system of the United States, which was founded with the mint and never distrusted subsequently, until after it was abrogated unobservedly in 1873. Executive opposition may delay it. But the well-defined attempt in this Congress to restore it will be followed by the achievement in the next, for there will be no mistaking the popular demand for it made evident in the interim.

The present low level of prices for all our great products, with a single exception, furnishes safety in the basis of expectation for the future. Hence, in every prospect and anticipation, I confess myself sanguine of the business situation during 1892.

WM. P. ST. JOHN.

CHASE NATIONAL BANK,
NEW YORK, December 23, 1891.

Editor Manufacturers' Record:

From present indications the commercial outlook for 1892 is most excellent. The financial disturbances of the past year in Europe appear to have nearly passed away, and the money market in London, Paris and Berlin has assumed nearly a normal condition once more. The losses, by reason of foreign loans to European investors, appear to have been widely distributed, and, with few exceptions, have been written off without great hardship. The holders of American securities abroad were able to sell the same or obtain advances because of their soundness, and this fact has given our country and its corporations a most excellent credit throughout the financial world.

We have harvested a bountiful crop, not of cereals only, but of fruits, vegetables, and, in fact, all the products of the soil have been most plentiful. Quite the contrary being the case in Europe, we are able to supply our neighbors across the water with food products at reasonable prices, and the balance of trade will be in our favor for some time to come. As we may expect to receive money in return for food products, as well as securities, the money market in the United States will probably be easy, and all sorts of business in this country will be stimulated thereby. It is to be hoped that speculation will not become too rampant with us, and that we will not put up the prices of our products and securities during the next six months to an abnormal point. We have a good government, a sound currency, and this year an abundant harvest. Our people are yearly growing richer, and the indications point to the year 1892 as one of great prosperity.

H. W. CANNON.

New Methods of Reducing the Cost of Manufacturing Sulphuric Acid and Superphosphates.

45 AND 47 WALL STREET,
NEW YORK CITY, December 28, 1891.
Editor *Manufacturers' Record*:

The advance in the price of Sicilian brimstone during the past 12 months has been something phenomenal, and there are many inquiries from interested parties, especially the consumers of brimstone for the manufacture of sulphuric acid, which is to be used as a means of dissolving the phosphate rock of Carolina and Florida. There has been much speculation as to the cause of this great and unusual advance. It has been a part of my business to undertake to ascertain the exact facts which have brought this condition of affairs about. It appears that the miners of Sicilian brimstone were, owing to the very low prices which prevailed for several years, drawing upon their richest deposits, and those deposits of sulphur-bearing earth which were the nearest to the top of the ground, and which were the most accessible, and therefore could be removed and treated with the least expense.

This state of affairs has continued for some six or eight years with the result of declining prices, owing to the extraordinary amount of production. This cause naturally produced its effects sooner or later, and the result we already see in an advance in the price of crude brimstone. About one-half of the brimstone produced in the world is used for the manufacture of sulphuric acid for the various purposes, the remainder being used for other purposes totally unconnected with the manufacture of acid, such as the manufacture of gunpowder, which consumes quite a large percentage, and still more largely the use for destroying the insects which infest the grapevines in the various parts of the world, and also the hopvines which are grown principally in colder latitudes than that in which the grape is produced. This, together with some other rather unimportant but still growing uses for pure brimstone, has very largely increased the consumption of this article.

This consumption is gradually increasing, and undoubtedly will continue to do so for an indefinite time. This, therefore, must in a great measure influence the price of the article, aside from the demand for making sulphuric acid. It is improbable that brimstone will remain for a term of years at the price which it has now reached, although it must be remembered that, taking 15 or 20 years' average, the price has not been far from that of to-day. It does not seem possible for the price of brimstone again to recede to those low figures which prevailed here during the past three or four years. The consumption of brimstone for all purposes has nearly doubled within the last ten years. This quantity is now no larger than the world is able to take care of at present, and the demand appears to be constantly on the increase.

It becomes, therefore, a question of great importance to those who are interested in the price of brimstone to know to what extent the future demands upon the brimstone market will be met. It does not seem possible that even the present amount can be produced at anywhere near the figures of the past, and when we take into consideration the fact that the increase for the next ten years is likely to be as great as that for the past ten years, a very serious question presents itself as to where this supply is to come from. Sicily seems to be the only point from which can be drawn the enormous quantities that are required by present consumers, and while Japan has undoubtedly large stores of this mineral, it has not been shown that it can be produced at a price that can successfully compete

with the Sicilian article. It must not be forgotten that brimstone is not found pure in nature to any great extent, and even at the best the percentage of sulphur found in sulphur-bearing material seldom exceeds 15 per cent. From this it becomes manifest that labor must very largely increase the cost of the production of this material.

Pyrites offers the only successful substitute for brimstone for the manufacture of sulphuric acid, as it contains when pure 53.3-10 per cent. sulphur and is mined in its raw state, which is capable of being charged directly to the furnaces for the manufacture of sulphuric acid. Heretofore the principle of manufacture of sulphuric acid from pyrites and brimstone has been practically the same, with the exception that the furnaces required for burning pyrites are somewhat more expensive than the furnaces for burning brimstone, but the resulting gases have been treated in precisely the same way, having been carried to the towers and to the leaden chambers which required about the same quantity of nitrate and the same treatment generally as the other.

It is only recently that an improvement has been discovered whereby the enormous cost of leaden chambers can be materially lessened by reason of smaller chambers being capable of producing an equivalent amount. The old chambers which are already in operation, by reason of these improvements, can be made to supply largely increased amounts by the simple addition of a mechanical device between the chambers, which increases their capacity from 30 to 60 per cent. This device is called the Lunge plate column, and was invented by Prof. George Lunge, of Zurich, Switzerland. As is well known, he stands at the head of the practical manufacture of sulphuric acid as well as the theoretical; in fact, he has made the theoretical essentially the practical. His inventions are eminently practical, as well as easy of application, and the construction is not excessively expensive.

While a new plant for the manufacture of sulphuric acid could be erected and these improvements added at a great saving of expense compared with the increased production, it is not essential in order to obtain the full benefits to procure successful working to do this. Anyone who wishes to increase his present plant without the annoyance and expense of building one or more new chambers can bring about this increase by the simple application of these plate columns to his present chambers. If he wishes to still further increase it in future he can do so, utilizing his present plant and making a very slight addition at a very moderate cost. In fact, it would be quite possible for a man with a given quantity of chamber space to double his capacity at an expense probably not exceeding 30 per cent. of his original cost.

It must be born in mind that this very large increase, while brought about in a very simple and ingenious manner, not only increases the production, and of course the quantity of ore which must be burned, but the cost of working the system is no greater than it was before the increase. Therefore, it will be observed that the actual cost per ton of acid is very materially reduced, as well as the quantity largely increased say from 30 per cent. to 60 per cent.

The deduction to be drawn from the foregoing is that pyrites must be adopted by all of the acid manufacturers of the Southern States, as well as the North, for the manufacture of superphosphates. This is insured beyond a peradventure by reason of the improvements above noted. The production of superphosphates in the South is still in its infancy, and must continue as long as it can be mined as cheaply and as advantageously as at the present time. That the Southern phosphates are

the best to be obtained in the world is proved by the enormous quantities that are so eagerly sought for shipment to the Old World. The demand for this material for the United States has hardly begun, and the benefits of its application are as yet imperfectly understood, as in the United States it has never been applied with that intelligence and liberality which alone can produce the results which are satisfactory to the "tiller of the soil."

At some future time, not very far distant, I shall take the liberty of again encroaching upon the columns of the *MANUFACTURERS' RECORD* in this direction, as the time at my disposal at present is not sufficient for me to cover this field in a manner satisfactory to myself.

H. J. DAVIS.

Southern Financial News.

NEW BANKS.

Augusta, Ga.—The Irish-American Dime Savings Bank, previously mentioned, has completed its organization with Patrick Armstrong, president; William Schweigert, vice-president, and P. M. Mulherin, cashier. The capital stock is \$30,000.

Brunswick, Md.—Local Frederick City and Loudoun county (Va.) capitalists contemplate the organization of a national bank in Brunswick in the spring.

Columbus, Ga.—The Columbus Savings Bank will increase its capital stock from \$50,000 to \$100,000. The additional capital is to be all paid in by April 5.

Huntsville, Ala.—E. H. Andrews writes that "on or about January 20 we shall open a national bank by the name of the Farmers & Merchants' National Bank with a capital stock of \$100,000." This is the bank reported in last issue as to be organized under the name of the Huntsville National Bank.

La Grange, Ga.—The Bank of La Grange, a State institution, previously reported as to succeed the First National Bank of La Grange, has been organized with L. J. Rendler, president; J. M. Barnard, vice-president, and J. G. Truitt, cashier. The capital stock is \$50,000.

Marietta, Ga.—The Marietta Trust & Banking Co., recently mentioned, has completed its organization with Dr. Lewis Sessions, of Union Springs, Ala., president; Joseph Paige, vice-president, and J. T. Anderson, cashier. The capital stock is \$75,000.

Martinsburg, W. Va.—The Merchants & Farmers' Bank, reported in last issue as chartered by J. W. Bishop and others, will be organized on January 12. The capital stock is \$25,000.

Pensacola, Fla.—Charles D. Pratt, of Pell City, Ala., is reported as arranging for the establishment of a bank in Pensacola with a capital stock of \$50,000.

Philippi, W. Va.—A new bank is being organized.

Quanah, Texas.—As lately stated, the First National Bank and the City National Bank will be consolidated under the title of the latter with a capital stock of \$100,000.

Savannah, Ga.—The Savannah Bank & Trust Co. will open a branch of its savings department in the De Soto Hotel building.

Savannah, Ga.—The Citizens' Bank obtained authority at the last session of the legislature to increase the limit of its capital stock to \$1,000,000 and to establish a savings department. At a recent meeting of the directors of this institution steps were taken for inaugurating the savings feature.

Weston, W. Va.—The bank referred to in last issue has been chartered as the Citizens' Bank of Weston by D. M. Bailey, J. S. Vandervert and others. It is expected to organize for business about January. The capital stock is \$25,000.

Atlanta, Ga.—E. Frank & Co., of New York city, are the purchasers of the \$28,000 of redemption bonds mentioned in last issue. The Mutual Life Insurance Co. purchased the \$500,000 of 30-year 4½ per cent. water works bonds. The price paid was 95 per cent.

Baltimore, Md.—The George's Creek Coal & Iron Co. has declared a semi-annual dividend of 3 per cent; Merchants & Miners' Transportation Co., a semi-annual dividend of 4 per cent; Baltimore Traction Co., a quarterly dividend of 1 per cent, aggregating \$50,000; Annapolis, Washington & Baltimore Railroad, a dividend of 3½ per cent, making 6 per cent. paid this year upon \$358,000 of stock.

Charlotte, N. C.—The Ada Manufacturing Co. has declared a dividend of 4 per cent.

Chattanooga, Tenn.—The Trust & Banking Co. has discontinued its deposit business and will make a specialty of the trust and surety business.

Chattanooga, Tenn.—The reorganization of the Chattanooga Southern Railroad, referred to in last issue, has by special request been undertaken by Newman Erb and Coffin & Stanton, of New York city.

Comanche, Texas.—The city has recently voted to issue \$15,000 of street improvement and water works bonds. For particulars address the mayor.

Eufaula, Ala.—H. D. Clayton, receiver of the John McNab Bank, will pay a dividend of 18 per cent. to the non-interest bearing deposit creditors of said bank.

Greenville, Miss.—The Bank of Greenville is reported as suspending payment, and W. A. Pollock, president, is said to have been appointed receiver. The liabilities will, it is stated, not exceed \$300,000, with assets of about \$720,000.

Lynchburg, Va.—The Commercial Bank has declared a semi-annual dividend of 4 per cent.

Maysville, Ky.—The Mason County Building & Saving Association, lately referred to, has declared a dividend of 6 per cent.

Montgomery, Ala.—The Alabama Grand Trunk Railway Co. will probably issue bonds for construction purposes.

New Orleans, La.—The Rescue Silver Mining Co. has declared a dividend of 5 cents per share; Orleans Railroad Co., a quarterly dividend of 2 per cent; New Orleans National Bank, a semi-annual dividend of \$15 per share; St. Charles Hotel Co., a dividend of 5 per cent; Jefferson City Gas Light Co., a semi-annual dividend of \$2.50 per share; Germania Savings Bank, a semi-annual dividend of \$4 per share, and the New Orleans City & Lake Railroad Co., a quarterly dividend of \$1.75 per share.

Richmond, Va.—The following semi-annual dividends have been declared: Virginia Fire & Marine Insurance Co., 5 per cent; Merchants' National Bank, 3½ per cent; Citizens' Bank, 3 per cent; Guarantee Building, Loan & Trust Co., 4½ per cent; Union Bank, 8 per cent, or \$4 per share; First National Bank, 5 per cent; Granite Perpetual Building Fund Co., 4½ per cent; City Bank, 3 per cent; State Bank, 3½ per cent; Planters' National Bank, 4 per cent; National Bank of Virginia, 3 per cent; Merchants & Planters' Savings Bank, 2 per cent; Old Dominion Steamship Co., 3 per cent, and the Richmond Perpetual Building, Loan & Trust Co., 5 per cent.

San Antonio, Texas.—Farson, Leach & Co., of Chicago, Ill., are said to have purchased \$60,000 of 6 per cent. city bonds.

Savannah, Ga.—The Germania Bank has declared a semi-annual dividend of 3 per cent; Oglethorpe Savings & Trust Co., semi-annual dividend of \$3 per share, and the Citizens' Bank, a semi-annual dividend of 3 per cent.

Way Cross, Ga.—The South Georgia Bank, lately referred to, has declared a semi-annual dividend of 4 per cent.

Wilmington, N. C.—W. S. O'B. Robinson, of Goldsboro, has been appointed receiver of the First National Bank of Wilmington, lately reported as suspending payment.

INSIDE window blinds are an important feature in every home. They afford comfort to the occupants, and when properly made and finished impart to the building a highly ornamental appearance, both in its exterior and interior arrangements. They are, in fact, a part of the furnishings of a house, and too much care cannot be exercised in selecting the kind and style of blinds whose general appearance shall harmonize with the finish. Much fault is urged against the inside folding blinds now in ordinary use. Their defects stimulated the manufacture of sliding blinds in which many of the faults of the folding blinds have been eliminated. We call the attention of our readers to the Hill inside sliding blind, made by the Monroe Manufacturing Co., of Lima, Ohio. This blind is meeting with much success and has the approval of leading architects. It is made light and strong. Although constructed of light material it is said to possess more durable qualities than a hinged shutter, and can be made in any combination to suit the architect or his client; can be closed with the window raised, and not blow open or rattle, thus, it is claimed, being a perfect medium of ventilation.

THE Triumph Compound Engine Co., of Cincinnati, Ohio, continues to receive flattering accounts of the performances of its engines. An engine furnished the Buffalo, Rochester & Pittsburgh Railway Co. several months ago has, according to Superintendent of Motive Power A. Dolbeer, been

doing good service under the most adverse circumstances, having unsuitable boilers and connections. He states that a test made October 28 was highly satisfactory, as well as surprising; the fact, as shown by cards Nos. 6 and 8, that the engine was carrying a load of 115 and 117 horsepower, taking steam through a two-inch pipe instead of a four-inch pipe, carrying the steam over 100 feet to the engine. Mr. Dolbeer closes his letter to the manufacturer of the Triumph engine as follows: "You will remember that you would not guarantee to me a horse-power over 90, although you thought it might show 100. We will be pleased to show this engine and its performance to anyone who is desirous of seeing a novel and unique machine get around at a rate of 350 revolutions per minute."

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PROPOSALS.

THE City of Sumter, S. C., invites bids for erecting and operating Water Works on the franchise or rental plan. Five miles of mains to be laid, and fifty-five hydrants to be erected thereon under direction of City Council. By order CITY COUNCIL, Sumter, S. C.
W. ALSTON PRINGLE, JR., Clerk & Treas.

MAYOR'S OFFICE.
GREENSBORO, N. C., Oct. 22, 1891.
The undersigned will receive sealed bids for LIGHTING THE CITY OF GREENSBORO, N. C., WITH ELECTRICITY from and after the 15th day of April, 1892. Bids to be made upon an estimate of not less than 50 arc lights of 1,500 candle-power each, or with incandescent lights of equal lighting capacity. Proposals are solicited, and it is desired that each shall contain an offer to light by the moon calendar, and also an offer to light all night. Bids will be opened on February 1st, 1892. All bids must be addressed to Jas. W. Forbis, Mayor, Greensboro, N. C. The city reserves the right to reject any and all bids.
JAS. W. FORBIS,
Mayor, City of Greensboro.

SEALED PROPOSALS will be received at the Office of the Supervising Architect, Treasury Department, Washington, D. C., until 3 o'clock P. M. on the 12th day of January, 1892, for all the labor and materials required to furnish and erect complete Three Hydraulic Passenger Elevators, One Hydraulic Mail Lift, including Pumps, Tanks, Cars, Platforms, Piping, etc., for the U. S. Postoffice, etc., Building at Brooklyn, N. Y., in accordance with drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Brooklyn, New York. Each bid must be accompanied by a certified check for a sum not less than 2% of the amount of the proposal. The Department will reject all bids received after the time herein stated for opening the same, also bids which do not comply strictly with all the requirements of this invitation. Proposals must be enclosed in envelopes, sealed and marked "Proposal for Three Hydraulic Passenger Elevators, One Hydraulic Mail Lift, etc., for the U. S. Postoffice, etc., Building at Brooklyn, N. Y.," and addressed to W. J. ED3ROOKE, Supervising Architect. December 16, 1891.



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SOUTHERN BANKS.

Below is published a list of Banks and Bankers in the Southern States, whom the MANUFACTURERS' RECORD commends to its readers:

GEORGIA.

AUGUSTA—Georgia Railroad & Banking Co., Chas. H. Phinizy, President. Capital \$4,500,000.

MACON—American National Bank Wm. H. Burden, President. Capital \$250,000.

MACON—Exchange Bank, H. J. Lamar, President; J. W. Cabanias, Cashier. Capital and surplus \$350,000.

MACON—First National Bank, J. C. Plant, President. Capital and surplus \$250,000.

SOUTH CAROLINA.

COLUMBIA—Carolina National Bank, W. A. Clark, President. Capital \$100,000.

VIRGINIA.

BUENA VISTA—Buena Vista Loan & Trust Co., C. B. Gayer, Pres. Capital \$100,000.

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*Means machinery is wanted, particulars of which will be found in "Machinery Wanted" columns.

In correspondence relating to matters reported in this paper, it will be a favor if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ALABAMA.

Attalla—Hardware Company.—The Attalla Hardware Co. has been incorporated.

Birmingham—Electric-light Plant.—The People's Electric Light & Gas Co. has, it is reported, put new machinery in its electric-light plant.

Columbia—Cotton Mill.—The stock company lately reported as erecting a cotton mill is composed of H. M. Beach, J. I. Darby, L. Culbreth and others. The main building of the mill will be 140 feet long and 78 feet wide, with engine and boiler-room attached.

Columbus City (P. O. Henryville)—Tannery.—The Columbus City Tannery Co. is being organized for the purpose of establishing a tannery. For information address I. M. Cone, No. 1 Beacon street, Boston, Mass.

Columbus City (P. O. Henryville)—Brick Works.—The Columbus City Brick Manufacturing Co. is now being organized; its purpose is to establish brick works. For information address I. M. Cone, No. 1 Beacon street, Boston, Mass.

Good Water—Wagon Factory.—The Good Water Manufacturing Co. will increase its capital stock \$10,000 and enlarge operations at its wagon factory, as reported last week.*

Greensboro—Ginney.—H. H. Evans & Co. will put in three additional gins.

Isbell—Stone Quarries.—C. F. Conrad has, it is stated, secured an interest in the Ensley fluxing quarries, the output of which is reported as to be increased to 500 tons per day.

Montgomery—Machine Shops and Roundhouse.—The Savannah, Americus & Montgomery Railroad Co. (office, Americus, Ga.) is reported as to erect machine shops and roundhouse at Clisby's Park.

Montgomery—Sewer System.—The city will soon commence work on the construction of the south outfall sewer; it will cost completed about \$8,000.

New Decatur—Furniture Factory.—The Decatur Manufacturing Co. will improve its plant during the month and introduce the manufacture of bedroom sets.

Oxford—Electric-light Plant and Water Works.—The city council is negotiating with a Philadelphia (Pa.) company for the erection of an electric-light plant and the construction of a system of water works in Oxford. The mayor can give information.

ARKANSAS.

Arkansas—Mining.—The Gertrude G. Placer Mining Co. has been organized in Chicago, Ill., to mine in Arkansas. W. A. Webber is president; capital stock \$1,000,000.

Dalton—Grist Mill.—T. J. McElroy is erecting a grist mill.

Little Rock—Bridges.—The Southwestern Bridge Co. has been incorporated with W. B. Woody, of Rockdale, president; J. O. Hill, of Navasota, vice-president, and T. M. Freeman, secretary, for the construction of self-supporting bridges. The capital stock is \$100,000.

Helena—Ginney, etc.—V. C. Wright & Co. intend to put in a gin plant with elevators, distributors, cleaners, etc.; also a press. Electric power will probably be used to operate the plant.

FLORIDA.

Anthony—Phosphate Mines.—J. C. Lamb and Mr. Kedney are reported as to organize the Royalty Phosphate Co. to develop mines, capital stock to be \$350,000.

Jacksonville—Phosphate Mines.—The address of J. S. Pence, recently reported as having purchased the Charlotte Harbor Phosphate Co.'s entire phosphate property, is at Urbana, Ohio, and not Cincinnati, as we had it.

Jacksonville—Phosphate Company.—The Florida Phosphate Trust has been chartered with J. M. Schumacher, president; Matthew Souville, vice-president, and J. R. Tyson, secretary; offices at Jacksonville, New York, Paris and London; capital stock \$100,000.

Ocala—Publishing.—The Ocala Banner Publishing Co., reported last week as incorporated, and the Florida Newspaper Union, of Palatka, have consolidated as the Florida Publishing Co., with T. E. Harris, president; Pierre De A. Pratt, vice-president, and C. L. Bittinger, secretary, to continue the publication of the Ocala Banner.

South Jacksonville—Fertilizer Works.—The Little Bros. Fertilizer & Phosphate Co., lately mentioned, will put in pyrites furnaces at its fertilizer works.*

GEORGIA.

Albany—Sewerage System and Water Works.—The city will hold an election to vote on the issuance of \$50,000 of bonds for water works and sewerage system. For information address the mayor.

Augusta—The Southern Fibre Co. has been incorporated with a capital of \$500,000 to control the patent fibre extracting machine of W. E. Jackson. W. E. Jackson is president of the company, and J. H. Jackson, secretary.

Bolton—Electric-power Plant.—The Atlanta & Chattahoochee River Electric Railway Co., of Atlanta, will erect an electric-power plant at Bolton, as stated last week; contract has been let.

Cordele—Planing Mill.—Moore, Kirkland & Co., of Montgomery, Ala., are erecting a planing mill and dry-kilns at Cordele.

Marietta—Chair and Table Factory.—The \$40,000 stock company lately reported as to be organized by James R. Brunby, of Mobile, Ala., and D. Simpson for the establishment in Marietta of a chair and table factory, has been incorporated as the Marietta Manufacturing Co.

Pembroke—Saw Mill.—W. H. Fournier, of Pooler, intends to purchase and operate J. B. Brown & Co.'s saw mill.

Savannah—Steamboat Line.—The Savannah, Darien & Brunswick Steamboat Co. has been incorporated with Jacob Rains, president; W. T. Gibson, S. A. Craig and others incorporators. The capital stock is \$15,000.

Tallahassee—Saw Mill.—The Tallahassee Lumber, Manufacturing & Railroad Co. has, it is reported, purchased the \$50,000 saw mill of the Chippewa Lumber Co., at Chippewa Lake, Mich., and will remove it to Tallahassee.

Tallahassee—New Industries.—It is stated that two new industries have been secured for location in Tallahassee. The Georgia-Alabama Investment & Development Co. can give information.

KENTUCKY.

Jackson—Saw Mill.—J. F. Lilley contemplates, it is said, the erection of a saw mill in Jackson.

Louisville—Power Plants.—The Ohio Falls Power Co. has been incorporated with J. Proctor Knott as president; A. S. Willis, vice-president, and George Du Relle, secretary, to produce, distribute and sell power for mechanical purposes. The authorized capital stock is \$1,000,000.

Louisville—Real Estate.—Lee Dinkelspiel, Louis Held, M. D. Volkman and others have incorporated the Jackson Land & Investment Co. for the purpose of dealing in real estate. The authorized capital stock is \$40,000.

Middlesborough—Land, etc.—The Pocket Co. has been incorporated with a capital stock of \$100,000 to deal in lands, etc. C. E. Mallett, Edward and Henry Nicoll, E. M. Greenley and A. H. Martin are the incorporators.

Owensboro—Brick, Terra-cotta, etc., Works.—Works for the manufacture of brick, terra-cotta, tiling, etc., are reported as to be erected at Worral's Mountain.

Owingsville—Land Cultivation.—G. G., J. C., F. M. and S. Hamilton and Lewis Apperson have organized a \$500,000 stock company to farm and raise stock, deal in tobacco, etc.

Paris—Creamery.—J. G. Roberts, of Chicago, Ill., is reported as to establish a creamery in Paris.

Pineville—Woodworking Factory.—J. W. Cromwell, of Fort Wayne, Ind., has started a woodworking factory in Pineville, as reported lately.

LOUISIANA.

Algiers—Iron Works.—Alfred Tutts & Co. are reported as erecting an addition to their iron works.

La Fayette—Water Works.—The city will put in a water works system. For information address Nama Schayot.*

New Orleans—Dye Works and Laundry.—The New York Steam Dye Works will put in a dyeing plant and steam laundry.*

New Orleans—Brick and Tile Works.—Charles Durieux, 215 Royal street, is endeavoring to organize a company to erect the brick and tile works mentioned last week.

New Orleans—Canal.—A resolution has been introduced in and passed the city council directing that plans and specifications be prepared for a canal on Claiborne street. \$10,000 may be appropriated to pay for the works.

New Orleans—Cigar, etc., Factory.—The Zetzmann Cigar Manufacturing Co., Limited, has been incorporated with William Zetzmann, president, and August Zetzmann, secretary, for the manufacture of cigars, cigarettes, tobacco, etc. The capital stock is \$20,000.

Washington—Brick and Tile Works.—H. L. Bidstrup is erecting brick and tile works.

MARYLAND.

Baltimore—Electrical Works.—The Southern Electric Co., previously reported as incorporated, has for its purpose manufacturing and dealing in electric supplies, machinery and apparatus. The capital stock is \$50,000.

Centreville—Grain Elevator.—At a meeting to be held in Centreville during the month, the farmers of Queen Anne's county will consider the erection of a State grain elevator.

Curtis Bay—Sugar Refinery.—The Baltimore Sugar Refining Co. at its recent meeting adopted a resolution authorizing an increase of its capital stock from \$1,000,000 to \$1,300,000, the additional stock to be used in the putting in of additional machinery and enlargement of its refinery.

Kingston—Saw Mill and Timber Lands.—Hayman & Johnson, of Salisbury, are reported as having purchased the timber land at Kingston of J. Upshur Dennis, and as to erect a saw mill on same.

Oakland—Electric-light and Power Plant.—The Oakland Electric Light & Power Co. will put new machinery in its electric-light plant.

MISSISSIPPI.

Hernando—Grist Mill and Gin.—G. T. & R. M. Banks will rebuild their cotton gin reported last week as burned; will also put in grist mill.*

Laurel—Lumber Mill.—A. M. Lewin, Samuel Heule and others have incorporated the A. M. Lewin & Son Co. for the manufacture of lumber, etc. The capital stock is \$200,000.

NORTH CAROLINA.

Durham—Real Estate, etc.—B. L. Duke, L. D. Heart, R. B. Boone and others have incorporated the North Carolina & Newport News Co. to deal in real estate, etc. The capital stock is \$150,000, with privilege of increasing to \$250,000.

Gastonia—Cotton Mill.—The Dixie Cotton Mills has been organized with J. T. Holland as president, and T. C. Pegram, secretary, to erect a cotton mill. The capital stock is to be \$50,000.

Raleigh—Electric-light Plant.—An electric-light plant will be put in the State Insane Asylum, as reported last week.

Williamston—Lumber Mill, etc.—T. W. Tilghman, of Grimesland; Dennis and D. D. Simmons have incorporated the Dennis Simmons Lumber Co. to manufacture timber, lumber, etc. The capital stock is \$45,000.

Wilmington—Electric-light Plant.—The Wilmington Cotton Mills is reported as to put in an incandescent electric-light plant.

Wilmington—Electric light and Power Plant.—New York parties, represented by E. L. Hawks, of Winston, and J. H. Barnard, of Asheville, having purchased the Wilmington Street Railway and propose to erect an electric-power plant to operate the railway; also will put in lighting plant.

SOUTH CAROLINA.

Columbia—Publishing.—W. J. Talbert, is president, and J. W. Bowden, secretary, of the Alliance Publishing Co., lately reported as incorporated to publish the Cotton Plant.

Darlington—Cane Mill.—J. A. Smoot has, as lately stated, established a cane mill.*

Marion County—Brick Works and Saw Mill.—D. A. Layton, of Florence, has, it is reported, started brick works in Marion county, and will also operate saw mill.

Fairfax—Canning Factory.—J. F. Preacher contemplates establishing a canning factory.*

Wagener—Publishing.—J. A. Gunter, W. P. Maher, J. B. Blume and others have incorporated the Wagener News Co. for the publication of a newspaper. The capital stock is \$5,000.

TENNESSEE.

Chattanooga—Rubber Factory.—The Southern Rubber Manufacturing Co. is now completing arrangements for the establishment of the rubber factory mentioned last week. Plans and specifications are now being prepared, and bids will soon be wanted for the erection of the buildings; will work about 200 hands, and have an annual capacity of \$50,000 worth of finished goods.*

Harriman—Electric-light Plant and Water Works.—The city contemplates the erection of an electric-light plant and the construction of water works. For information address W. H. Parsons, city clerk.

Nashville—Ice Factory.—The proper name of the ice company reported last week is the Consumers' Ice, Coal & Cold Storage Co.; site has been selected, and the company is now arranging for a complete ice plant; Edward Schoenpflug, secretary.

TEXAS.

Abilene—Water Works.—The Abilene Water Works Co., reported last week as incorporated, has purchased the city water works and will, it is stated, expend \$100,000 in improving the plant. The incorporators are J. P. Miller, of Chicago, Ill.; R. E. and J. M. Carter and others.

Austin—Woolen Mill.—W. J. & C. A. Reynolds, of Rhode Island, are endeavoring to organize a \$75,000 stock company to remove their woolen mill to Austin.

Austin—Flour Mill.—Mr. Gettis, of Monterey, Mexico, contemplates removing his flour mill to Austin.

Austin—Electric-light Plant.—The Austin Water, Light & Power Co. has put new machinery in its electric-light plant.

Burnet—Woolen Mill.—A woolen mill may possibly be established.

Comanche—Street Improvements and Water Works.—The city council recently voted an issuance of bonds for \$15,000 to improve streets and construct water works.

Dallas—Medicine Factory.—The Lone Star Medicine Co., lately reported as incorporated, has for its purpose the manufacturing of patent and proprietary medicines, etc.

Dallas—Coal Mines.—W. A. Dennis, J. M. Steere, C. A. Keating and others have incorporated the White Ash Coal & Mining Co. The capital stock is \$100,000.

Dallas—Coal Mines.—H. L. Kniffen is president, and C. J. Miles, secretary, of the National Coal & Mining Co., reported lately as incorporated.

Dallas—G. W. Blabon, J. A. Bell, A. S. Kaube and others have incorporated the Dallas & Oak Cliff Co. with a capital stock of \$1,000,000.

Denison—Cotton Mill.—The Denison Manufacturing Co.'s cotton mill has been purchased by the contributing stockholders through A. P. Childs, of Brattleboro, Vt. It is proposed to issue bonds, complete the equipment of the mill and put it in operation. M. F. Foster, of Milford, N. H., has charge of mill and purchases, and can be addressed for further particulars.

Elgin—Oil Well.—William Batin has sunk an oil well on his property.

Farmersville—Cottonseed-oil Mill and Refinery.—The stock has been subscribed for the company mentioned last week to erect a cottonseed oil mill; a cottonseed refinery will also be erected. For information address W. B. Young.

Fort Worth—Land.—The South Fort Worth Land Co. has been incorporated with a capital stock of \$50,000. The incorporators are C. N. Crane, J. P. King, James Swayne and others.

Fort Worth—Artesian Wells.—The Panhandle Implement Co. has received contract for the sinking of the artesian wells for the new water works system.

Galveston—Grain Elevator.—Frank Cockrell, of Dallas, contemplates erecting, it is said, a grain elevator in Galveston.

Houston—Fire-alarm System.—The city has let contract for the installation of an electric fire-alarm system of 50 boxes and about 20 miles of wire.

Jacksonville—Pottery.—The pottery lately mentioned as to shortly be put in operation has been established by Mr. Hollaway.

Lockhart—Water Works.—W. F. Blunt is building a 20,000-gallon cistern to increase the water supply of his plant.

Port Lavaca—Nursery.—Mr. Van Doyen is to establish a nursery at Port Lavaca.

San Antonio—Machine Shops and Refrigerating Plant.—The San Antonio Cold Storage & Manufacturing Co., lately reported as incorporated, will put in a 20 or 25 ton refrigerating plant and a small machine shop.

Velasco—Brick Works.—Maboney & Swanson are reported as to establish brick works with a daily capacity of 50,000 brick.

Velasco—Cotton Compresses, Grain Elevators, etc.—J. A. McLellan, Abner Taylor, W. H. Harper, of Chicago, Ill., and others will erect grain elevators at Velasco, as reported lately. They

will, for this purpose, organize the Velasco Elevator & Compress Co. with a capital stock of \$200,000, and will also compress cotton. The capacity of the elevator will be not less than 500,000 bushels.

VIRGINIA.

Belfield—Planing Mill.—The company reported last week as erecting a planing mill is known as the Belfield Manufacturing Co. A. L. Shepard, of Richmond, is president, and W. F. Deal, secretary; capital stock \$50,000.

Big Stone Gap—Timber Lands, etc.—The Virginia Carolina Timber Co. has been organized to deal in timber land, lumber, etc. W. H. Nickels is president; R. C. Smith, treasurer, and E. W. Nelson, of New York city, secretary; capital stock \$100,000.

Cambria—Electric-light Plant Ice Factory, etc. J. Rigby states that he expects to put in an electric plant and an ice plant.*

Lynchburg—Dry-kiln.—Adams & Woodson contemplate adding a dry-kiln to their lumber plant.

Mineral City—Pyrites Mine.—The Virginia Pyrites Mining Co. is now at work developing its pyrites mine near Mineral City previously reported.

Norfolk—Electric-light Plant.—The Thomson-Houston Electric Co., of Boston, Mass., has contract for the erection of an electric-light plant at the Norfolk navy-yard.

Norfolk—Mill.—Contract will shortly be let for an \$80,000 mill to be erected at Poindexter Place. Parke L. Poindexter, 6 Lowenberg Building, can give particulars.

Norfolk—Pipe Wells.—N. H. Farquhar, Navy Department, Washington, D. C., will receive sealed proposals until January 19, 1891, for double pipe wells to be driven at the navy-yard at Norfolk. A certified check for \$500 must accompany each bid.

Norfolk—Electric-light Plant.—The City Gas Light Co. has put new machinery in its electric-light plant.

Portsmouth—Cotton Compress.—The Virginia Cotton Press Co. will, it is stated, establish a cotton compress, etc., at Milligan's Point at a cost of \$150,000.

Richmond—Furniture, etc., Factory.—The J. B. Welsh Furniture Co., reported last week as incorporated, has purchased and is now operating the old J. B. Welsh factory for making furniture and specialties.

Richmond—Saw Mills, etc.—The J. W. Fuqua Lumber Co. has been organized with A. L. Shepard, president, and E. A. Sheppard, secretary, to deal in lumber, operate saw mills, etc. The authorized capital is \$50,000.

Riverton—Flour Mill.—The Riverton Mills Co. has been incorporated to succeed the Riverton Mills Co., Limited, operating a flour mill. The capital stock is \$50,000.

Roanoke—Vinegar Factory.—Louis B. Scholz has, it is reported, erected a vinegar factory.

Roanoke—Planing Mill.—Oliver & Co. have, it is stated, erected a planing mill 50x100 feet.

Shenandoah—Plumbers-supply Works, etc.—The Clarence H. Rose Co. will probably be incorporated with a capital stock of \$300,000 to operate the plumbers-supply works, etc., of Clarence H. Rose.

Staunton—Ice Factory.—Andrew Bowling has purchased the Staunton ice factory, as reported in our last issue.

Suffolk—Shingle Mill.—Joseph Wilkens will, it is stated, erect a shingle mill.

Suffolk—Electric-light Plant.—The Suffolk Light & Water Co. is reported as to increase the capacity of its electric-light plant.

Virginia—Iron Mines.—W. A. Rinehart & Co. have commenced the development of iron ore at Oriskany, Botetourt county.*

West Norfolk—Saw Mill.—The Bav Lumber Co. has erected, as stated last week, a saw mill.

WEST VIRGINIA.

Belington—Coal Mines.—Augustus Custer, of Franklin, Pa., and others have, it is reported, purchased a tract of coal land near Belington, and will develop same.

Buckhannon—Saw Mill and Timber Lands.—The Buckeye Lumber Co. has purchased a tract of timber land and contracted to saw the timber on same.

Central City (P. O. Huntington)—Brewery.—A brewery may be erected. M. Halloran, Ironton, Ohio, can give information.

Central City (P. O. Huntington)—Flour Mill.—The Central City Milling Co., reported last week as incorporated, is operating the 100 barrel flour mill previously reported as let to contract.

Charlestown—Electric-light Plant.—The Charlestown Gas & Electric Co. contemplates putting new machinery in its electric-light plant.

Colliers.—Coal Mine.—L. O. Smith, of New Cumberland, has commenced the development of a coal mine at Colliers.*

Elkhorn—Coal Mines.—The Shawnee Coal & Coke Co., of Pocahontas, Va., lately mentioned,

will about April 1st next commence the development of its coal mines on Elkhorn.

Fairmont—Coal Mines and Coking Plant.—J. E. Watson and others have incorporated the Bryar Hill Coal & Coke Co. to develop coal mines and operate coke plant. The authorized capital stock is \$500,000.

Fayette County—Coal Mines.—J. F. Effinger, of Staunton, Va., and others have incorporated the Brooklyn Coal Co. to develop coal mines. The capital stock is \$100,000.

Grafton—Planing Mill.—W. H. Morgan & Son are reported as building an addition to the planing mill in South Grafton in order to put in additional machinery.

Petersburg—Electric light Plant.—The Upper Appomattox Electric Light Co. will, it is reported, put new machinery in its electric light plant.

Sissonville—Lumber Boom.—The Poco River Boom Co., lately reported as incorporated to construct a lumber boom on Poco river, has completed its organization with A. C. Humphreys, president, and S. L. Farley, secretary.

Sistersville—Oil Well.—William Forsyth has leased land in the vicinity of Sistersville, and will bore for oil.

Sistersville—Oil Lands.—Shay & Smith, of Pennsylvania, have leased for development 43 acres of oil lands in the vicinity of Sistersville.

Wheeling—Furniture and Rattan Factory, etc. W. H. Ramp, John Arbens and others have incorporated the Arbens Reed & Rattan Co. to manufacture and deal in reed, rattan, furniture, etc. The capital stock is \$100,000.

Wheeling—Roofing Works.—The Caldwell & Peterson Manufacturing Co. has let contract to the Kleves Kraft Co. for the erection of an additional building to its roofing works.

Building Notes.

Albany, Ga.—Church.—Contract has been awarded for the erection of a church for the Baptists.

Atlanta, Ga.—Warehouse.—The Thomson-Houston Electric Co., of Boston, Mass., is said to contemplate the erection of a three or four-story warehouse 143x150 feet in Atlanta for its Southern headquarters.

Atlanta, Ga.—Depot.—The Western & Atlantic Railroad Co., referred to in last issue, contemplates the erection of a new freighthouse 370x40 feet within the next few months.

Atlanta, Ga.—Station-house.—Miles & Bradt have been awarded contract at \$4,235 for the erection of the station house previously reported G. L. Norman prepared the plans.

Augusta, Ga.—Architect Todd has prepared plans for three cottages to be built on the arsenal grounds.

Augusta, Ga.—D. G. Zeigler will furnish plans for a \$10,000 residence for J. M. Berry, \$8,000 residence for Mrs. James Bailey, \$6,000 residence for D. Carr, and \$8,000 store and residence for Mrs. N. King.

Baltimore, Md.—Frank Herbert will erect 11 two-story brick dwellings; B. W. Minor, 2 two-story brick buildings; R. B. Mason & Co., 3 three-story buildings; George Walz, 5 two-story brick buildings; A. K. Boteler, a two-story brick building; E. C. Myers, a three-story brick dwelling; C. C. Bombaugh, a three-story brick building; J. Lockhart, 2 three-story buildings; S. Lewin, 2 three-story brick buildings, and J. A. Butt, 4 two-story brick buildings.

Bluefield, W. Va.—Hotel.—E. H. Stewart contemplates rebuilding his hotel recently burned.

California, Ky.—Hall.—W. J. Hissem, W. E. Dameron, T. B. Wiley and others have incorporated the California Knights of Pythias Building Co. with a capital stock of \$5,000.

Charleston, W. Va.—Hotel.—It is stated that Pittsburg capitalists will erect a 60-room hotel in Charleston.

Columbia, S. C.—Hotel.—Local and Boston (Mass.) parties are reported as to form a company to build a \$100,000 hotel. W. K. Greenfield can give information.

Columbus City (P. O. Henryville), Ala.—The Columbus City Mining, Manufacturing & Development Co. has awarded contract to J. H. Murphy, of New York city, for the building of 20 houses, and to J. H. McGrath, of Boston, Mass., for the erection of 16 houses at Columbus City.

Columbus City (P. O. Henryville), Ala.—Hotels. The Columbus City Mining, Manufacturing & Development Co. is building two hotels at Columbus City. One, to accommodate 50 people, is nearly completed, and the other, to have accommodations for about 250, is under way. The work of construction is under the supervision of L. W. Clapp.

Covington, Va.—E. C. Jones has contract for the erection of 2 houses for the Misses McCurdy; Long & Son, contract for 3 tenement houses; W. A. Rinehart will erect 4 houses, and A. A. McAllister, 5 houses.

Galveston, Texas—Asylum.—Dr. William Knapp, of Lincoln, Neb., is said to contemplate the erection of an insane asylum in Galveston to cost \$300,000.

Harper's Ferry, W. Va.—Church.—The Catholics contemplate building a church. Rev. T. J. Wilson can give information.

Hot Springs, Ark.—Hotel.—It is reported that E. Bargar is erecting a three-story hotel.

Key West, Fla.—J. J. Warren contemplates erecting a brick business building.

Knoxville, Tenn.—Baumann Bros. have prepared plans for the erection of a five-story office building 37x107 feet to cost \$35,000; also for 4 business buildings for William Caswell.

Macon, Ga.—Schoolhouse.—The erection of a school building to cost \$10,000 is contemplated.

Marietta, Ga.—Bank Building.—The Marietta Trust & Banking Co. contemplates erecting a building.

Marlinton, W. Va.—Courthouse and Jail.—S. L. Brown, county clerk, Huntersville, W. Va., will receive plans and specifications for a courthouse, jail and clerks' offices at Marlinton; also bids for erecting same.

Nashville, Tenn.—Schoolhouse.—A school building to cost \$8,000 will be erected in South-east Nashville. The mayor can give information.

Paris, Tenn.—College.—A stock company is being organized to build a college in Paris.

Quannah, Texas—Opera-house.—The erection of an opera-house building is proposed.

Radford, Va.—J. J. Donelson, of Roanoke, will, it is stated, erect a brick building in Radford.

Radford, Va.—Church.—The edifice reported in last issue as to be built for the Methodist Episcopal Church will be 33x58 feet and cost about \$5,000. W. H. Hayes, of Minneapolis, Minn., is the architect, and Leffler & Kirkbride the contractors.

Wheeling, W. Va.—The Bloch Bros. Tobacco Co., referred to in last issue, expect to erect a seven-story building.

Williamson (P. O. Logan), W. Va.—Hotels.—J. C. Williamson, of Mouth of Pond, Ky., reports that he is erecting an \$8,000 hotel, and the Williamson Mining & Manufacturing Co. will soon commence the erection of a \$10,000 hotel.

Winston, N. C.—Hotel.—G. R. Quincy will endeavor to organize a stock company to build the \$75,000 hotel referred to in last issue.

Ybor City, Fla.—Opera-house.—Clinton Gunby has secured contract at \$7,000 for the erection of a two-story opera-house.

BURNED.

Alexander, Texas.—The Alexander Roller Mills; loss \$18,000.

Ashland, Ky.—The planing mill of Clark & Hampton.

Bowling Green, Va.—The saw mill of Charles Collins, near Bowling Green.

Columbus, Ga.—J. R. D. Omer & Co.'s carriage factory; loss \$8,000.

Elizabeth City, N. C.—The planing mill of T. A. Commander & Sons.

Gaffney City, S. C.—The saw, grist mill and cotton gin of T. G. McCraw.

Glidden, Texas.—The cotton gin of T. J. & A. Oakes, near Glidden.

Greensboro, Ga.—The ginney, mill and engine-house of R. W. Branch.

Honey Grove, Texas.—Morgan & Evers' cotton gin.

Lake City, Texas.—J. W. Henderson's cotton gin.

Norfolk, Va.—The carriage and harness factory of the United Carriage & Harness Manufacturing Co.

Powderly, Ala.—The People's Ice Factory, damaged by an explosion.

Richmond, Ga.—The chert factory of George A. Lathrop.

Tarboro, N. C.—The cotton gin of J. L. Wimberly.

Westminster, Md.—The bone and grist mill, blacksmith shop, etc., of Emanuel Yeiser.

Whitakers, N. C.—The Taylor ginney.

THE Virginia Pyrites Mining Co. has a mine within 100 yards of the terminus of Sulphur Mine Co.'s railroad, about four miles from Mineral City in Louisa County. The company has procured a charter from the legislature, and will either connect with the Sulphur Mines Road, or build a connection to Chesapeake & Ohio Railroad. It expects to ship from 100 to 400 tons of ore per day when it gets in full operation.

D. G. ZIEGLER, architect, Broad and Jackson streets, Augusta, Ga., wants circulars from manufacturers in his line.

FLORIDA PHOSPHATES.

Progress of Development up to the Close of 1891.

[Special Cor. MANUFACTURERS' RECORD.]

BARTOW, FLA., December 26, 1891.

Though steps are now being taken to form an association among the miners of hark rock in this State, no organization has as yet been effected among them, and none has ever been even proposed among the pebble phosphate miners. Therefore the difficulty of obtaining reliable statistics of development will be appreciated. But by taking the official reports of the amount of phosphate, both hard rock and pebble, transported over the railroads of the State and exported from our seaports for a specified time, and estimating the probable amounts for the remaining months or days of the year, we may approximate the total production from the beginning of the industry up to the close of 1891.

THE FIRST WHEELBARROW LOAD of phosphate moved in Florida was taken from Peace river in the spring of 1888. In May of that year 10 carloads were shipped from the one mine then open. Two years later, May, 1890, there were but three pebble phosphate plants in operation in De-Soto county, and none elsewhere in the State. Several companies were organized, however, in Polk and Hillsboro counties, where many discoveries were made during the years 1889-90. At present there are 33 pebble phosphate plants in operation in the State, viz: 10 in Polk county, 8 in De-Soto county, 3 in Hillsboro county, 1 in Lee county and 1 in Black river in the northern part of the State. Besides those just enumerated as producing, there are 7 more plants in Polk county and 1 in Hillsboro in process of construction, which will be raising pebble early in the coming year.

The shipments of pebble from Punta Gorda, from the initial cargo in 1889 up to September 1, 1891, (official) amounted to 49,310 tons. From September 1 to December 31 (official) 27,065 tons. From December 1 to 31, inclusive, (estimated) 5,745 tons.

	Tons.
Total from Punta Gorda.....	75,000
Exported from Alafia river, Tampa City and other Gulf ports not included in above (estimated).....	10,000
Received at Bartow and carried North by S. F. R. R. up to September 1, 1891, (official).....	32,688
Received at Bartow and carried North by S. F. R. R., September 1 to December 31 (estimated).....	9,012
From Black river via St. John's river (estimated).....	8,000
Total pebble output.....	134,700

HARD ROCK PHOSPHATE

was first discovered in May, 1889, and a number of companies were organized during that and the succeeding year. Development was not fairly begun until about the close of 1889 or the early part of 1890.

Up to September 1, 1891, the Florida Central & Peninsular Railroad had transported 63,198 tons, of which—

Fernandina had received.....	47,760
Between September 1 and November 30, according to an unofficial report, Fernandina had received.....	6,451
Estimated for remainder of year.....	9,789
Total at Fernandina.....	64,000

The F. C. & P. R. R. had delivered at other points up to September 1, 37,438 tons. Estimating the same increase in amounts delivered at these points as at Fernandina, we add September 1 to December 31..... 7,562 tons.

Exported from Port Tampa to November 30.....	18,200
Estimated for balance of year from this port.....	5,800
Total hard rock.....	111,000

RESUME.

Pebble phosphate.....	134,000
Hard rock phosphate.....	111,000
Estimated total production to Dec. 31, 1891.....	245,000

Several shipments have been made from Savannah and Brunswick, Ga., aggregating perhaps 8,000 tons, but these shipments are included in the amounts transported by rail, and the above footing will very closely approximate Florida's total shipments up to the close of this year.

As indicating the rapid growth of the business, it should be stated that the first shipment from Charlotte Harbor (Punta Gorda) was made in April, 1890, and the

[CONTINUED ON PAGE 45.]

— PYRITES —

For the Manufacture of Sulphuric Acid UP TO DATE.

Our Mr. Davis was the first man to enter the field of supplying pyrites for the manufacture of sulphuric acid in the United States. He is the owner of the well-known Davis mines in Massachusetts, which have already produced upwards of 400,000 tons of a most excellent quality of pyrites. The entire output of this mine has been sold for several years in advance, and consequently we have been obliged to look elsewhere for a supply, and have secured the entire surplus of the

SIERRA MORENA PYRITES

53 per cent. Sulphur.

It is beyond contradiction that this ore is of the highest grade of pyrites ever found in the world, being practically a pure bisulphide of iron, and containing 53 per cent. of sulphur.

Mr. Davis has just returned from a three months' trip abroad, during which time he visited all of the progressive sulphuric acid manufacturers in England, France, Belgium and Germany—in all, between sixty and seventy works.

In about one-half of these works the sulphuric acid was used for the manufacture of superphosphates. The improvements in the manufacture of sulphuric acid during the last three years have been something wonderful, and the cost of acid by reason of these improvements can be reduced from 33 per cent. to 50 per cent. without a large outlay of money, and the plants at present in use can be utilized to the fullest extent.

We control the patents for these improvements exclusively for the United States and Canada. It is impossible for anyone not having these improvements to compete with parties who have secured them.

For information and particulars in regard to the above, address

THE DAVIS PYRITES COMPANY,

Nos. 45 to 47 Wall Street, New York.

Information About the South.

THE marvelous mineral and timber wealth of the Southern States, the unrivalled capabilities as a manufacturing area, and the astonishing progress they are making in developing their natural resources and in utilizing their facilities for manufacture, are attracting the attention of the whole world. The extent of these resources and advantages is so fully and carefully set forth, and the progress of this development so faithfully chronicled from week to week in the MANUFACTURERS' RECORD, that it is now accepted everywhere as unquestioned authority on Southern affairs, and its statistics and statements are drawn upon by almost every writer or speaker on any Southern topic.

Its weekly issues constitute an authentic history of the industrial progress of the Southern States. It furnishes every week a vast variety of information on Southern affairs that can be gained from no other source. It discusses in its editorial columns and in its correspondence every topic of Southern interest. It presents the resources and the development of the South in all their phases. To all who are in any way interested or concerned in the prosperity of the South, or who care to keep posted as to the industrial and commercial progress of that section, the MANUFACTURERS' RECORD is indispensable. It is an 80-page weekly industrial, financial and railroad paper. Why not subscribe. Price \$4 a year.

Read What Others Say of the MANUFACTURERS' RECORD and Its Work.

EXTRACTS From a Few of the Hundreds of Letters of Commendation Recently Received:

- Contains best exposition of details of Southern advancement.—*J. S. Jeans, Secretary British Iron and Steel Institute.*
- It is to the industrial South as the sun is to the day.—*J. Reese, inventor of the Basic process.*
- It furnishes the inspiration of Southern progress.—*Louis T. Baxter, President Nashville Commercial Club.*
- Contributed more than all other papers and parties to Southern prosperity.—*E. Watkins, President Chattanooga & Lookout Mountain Railroad.*
- Largely instrumental in attracting capital.—*Jarvis-Conklin Mortgage Trust Co., Kansas City, Mo.*
- Renders valuable and appreciated service.—*C. R. Makepeace, Providence, R. I.*
- More effective than all other agencies in Southern development.—*Lorin Blodgett.*
- Occupies first rank as an authority on Southern interests.—*Baltimore, Chesapeake & Richmond Steamboat Co.*
- Has no rival in value and efficiency as an advocate of Southern advancement.—*Marion, North Carolina, Improvement Co.*
- Value of your paper to our Southland is simply incalculable.—*W. K. Clark & Bro., Clarksville, Tenn.*
- Leads every journal of its class.—*Commercial and Industrial Asso., Montgomery, Ala.*
- Has been the greatest factor in Southern development.—*P. H. Hanes & Co., Winston, N. C.*
- By far the ablest and most intelligent exponent of Southern resources and progress.—*P. A. Hull, Pineville, Ky.*
- Cannot have sufficient praise and commendation.—*Builders and Traders' Exchange, Louisville, Ky.*
- Have always admired its energy, dignity and honorable methods.—*C. A. Gambrill Mfg. Co., Baltimore, Md.*
- More potent than any other single instrumentality.—*George B. Cowlam, Knoxville, Tenn.*
- Invaluable to everyone interested in the South.—*Frederic Taylor, New York.*
- Useful and efficient in building up the South.—*John A. Hambleton & Co., Baltimore.*
- Reliable, efficient and a valuable advertising medium.—*John F. Jones, Blacksburg, S. C.*
- Have had better and richer results from it than almost any other paper.—*Egan Co., Cin.*
- Have found it the best medium in the South.—*Hercules Iron Works, Chicago.*
- Has been an active agent for me in my business.—*Wm. Minnigerode, Cincinnati.*
- An encyclopedia of Southern information.—*S. Laurence French, Boston.*
- An important medium of information, thoroughly reliable and most valuable advertising journal.—*Wilson, Colston & Co., Baltimore.*
- Rendered most valuable aid towards Southern development.—*J. M. Robinson, President Seaboard Air Line.*
- I find the MANUFACTURERS' RECORD everywhere in the South.—*A. E. Randle.*
- Its work can't be overestimated.—*Hon. Pat Calhoun, Atlanta, Ga.*
- It is in every workshop and on the table of every capitalist seeking investment.—*M. M. Martin, Natural Bridge, Va.*

[CONTINUED FROM PAGE 45.]

total amount finding an outlet at that port during that year was only about one-sixth of the amount shipped in 1891. And of the total exports credited to Port Tampa, only 700 tons were shipped prior to 1891. Finally, analyzing the official and unofficial figures for the whole period covered by these reports, we may fairly estimate FLORIDA'S PHOSPHATE OUTPUT IN 1891 AT 186,000 TONS.

This is just 11,000 tons in excess of the estimate made by your correspondent last April, and should the production of 1892 show a like percentage of increase over the estimate then made for that year, the output should be 275,000 tons.

JAY SHRADER.

NORFOLK'S FISH INTERESTS

A Great Rush of Grain to Norfolk and Newport News.

[Special Cor. MANUFACTURERS' RECORD.]

NORFOLK, VA., December 23, 1891.

The fish business is quite an important one for this section of country; in fact, the best breeding grounds in the world are found in the Carolina sounds and Chesapeake bay, the one just south and the other just north of Norfolk.

During the ten days between the 10th and 20th of this present month the fishermen of the coast just below us have been having a regular picnic with the enormous catch of bluefish with which they have been favored.

The run lasted only nine days, although, of course, some few scattering fish were taken before and after the above dates, yet really 95 per cent. were taken during a period of nine days. It was the largest haul on record for this coast.

The total catch that was shipped North to the Northern seaboard cities amounted, in round numbers, to 2,000 boxes, of 180 to 200 pounds per box, or nearly 400,000 pounds, which equals 200 tons. These fish were all sent North via Norfolk. Owing to lack of sufficient transportation from the beach to the packing-houses one large haul of 3,000 fish (18,000 pounds) was an entire loss.

Take into account the local consumption and the odd lots sent to cities South and the fish lost, and the total catch would not fall much short of a half-million pounds. At the beginning of the season the price reached 12 cents per pound, but the quantity shipped soon reduced the price to as low as 6 and 7 cents.

One man sold the fish caught in a single day right on the ground for \$900. At one time the great number of fish in a net prevented its being hauled to shore until it was cut in two in the middle and one-half hauled in at a time.

The net used is the "gill net." When a school of bluefish are located the net is drawn across their pathway or course and the fish run their heads into the meshes of the net and are caught by the gills and are held fast until taken out by the fishermen. In taking them from the net great care has to be taken, as they snap off a finger as easily as a lady snips off the end of a thread with her scissors.

The bluefish is a terror to all the smaller fish, as they are destroyed by the million to satisfy the rapacity and voracity of these "pirates of the deep," or we may term them "cannibals of the deep," as they subsist entirely upon other fish. They are more than a match for the "dogfish," a small species of shark, and either drive him off or eat him up in short order. They range in weight from 6 to 16 pounds each.

There are about three sizes of them and each size runs in a school by themselves. There are the "sea blues," so called by the fishermen, which are the largest; then there is the regular "bluefish," the middle size; then the "tailors" or smaller size.

It is not known where they breed. They are "tramp fish" and, like their human prototype, have a tremendous appetite.

Their principal food here at this time is the herring, menhaden and alewives, the latter two being closely allied to the shad. It is apprehended that the enormous run of "bluefish" means short fish supply next season.

These fish at this time are heading northward, and while the Northern waters are icy cold, our fisherman here find it very comfortable in the water half of the time.

It is expected that these fish will soon turn southward, and that our people will then get another chance at them. The shore for many miles south of Cape Henry is fished both in summer and in winter, and a very large revenue is derived from the fisheries in the near proximity to Norfolk.

In this connection it is an interesting suggestion made by one of our close observing scientists, that if all destruction of animal, mineral and plant life could be stopped for a period of less than one month in the waters of the seas on our globe, that the waters would be literally and completely filled with such growth. So it seems that nature has a system of "checks and balances," a method of "reducing the surplus" and holding things level, that excites our curiosity and thought and claims our profoundest admiration.

A prominent transportation man at Newport News informs me that on the eastern 100 miles of the Chesapeake & Ohio Railroad there are now 2,200 cars of wheat at the different sidings awaiting a chance to get to Newport News to be unloaded into vessels awaiting to receive it. The mammoth elevator at that point is also full.

The Norfolk & Western Railroad is also snowed under with grain. Europe may go hungry yet with millions of bushels of grain blocked on this side, owing to lack of transportation and facilities for handling it. There is a general and widespread complaint of a shortage of cars.

The people of the whole country are pretty sure to see how necessary the railroads are to the prosperity of a country. The efforts that have been made and that are now being made to compel the roads to cut down rates, has compelled the roads to cut down expenses and make the same amount of rolling stock answer for increased mileage, until now the railroads are actually unable to move the great crops of the West to the seaboard as fast as is necessary. Some laws that look well on their face prove "boomerangs."

MACHINERY WANTED.

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

Boiler and Engine.—J. Rigby, Cambria, Va., may need an 80 horse-power engine and boiler.

Canning Factory.—J. F. Preacher, Fairfax, S. C., wants to correspond with manufacturers of canning-factory outfits.

Concentrators.—The Piedmont Gold & Silver Mining Co., Buford, Ga., will want concentrators. Cotton Gin, etc.—G. T. & R. M. Banks, Hernando, Miss., will be in the market for four gin stands, feeder, condensers and self picking press.

Dye Works.—The New York Steam Dye Works, New Orleans, La., will need machinery for dye works.

Dynamos.—Paul Sattelkau, Jacksonville, Fla., is in the market for dynamos of from 1 to 20 horse-power.

Electric Plant.—M. W. Mason, Norfolk, Va., wants electric equipment, boiler, engine, etc., for an electrical railroad.

Elevator.—G. T. & R. M. Banks, Hernando, Miss., will be in the market for elevator (for cotton gin).

Elevators.—The Southern Rubber Manufacturing Co., Chattanooga, Tenn., is ready to receive estimates on elevators in factory building. Address Charles Tipton.

Elevators, etc.—W. J. Edbrooke Washington, D. C., will receive sealed proposals until January 12, 1892, for all the labor and materials required to furnish and erect complete three hydraulic passenger elevators, one hydraulic mail lift, including pumps, tanks, cars, platforms, piping, etc., for the United States postoffice, etc., building at Brooklyn, N. Y. Plans and specifications can be had on application.

Engine.—The Tidewater Oil Co., Savannah, Ga., may want an engine.

Engine.—W. A. Rinehart & Co., Covington, Va., will purchase a 20 horse-power engine.

Engines.—The Southern Rubber Manufacturing Co., Chattanooga, Tenn., is ready to receive bids on engines. Address Charles Tipton.

Gold Mill.—The Piedmont Gold & Silver Mining Co., Buford, Ga., will want gold-mill machinery.

Grist Mill.—G. T. & R. M. Banks, Hernando, Miss., want a grist mill.

Heating Apparatus.—The Southern Rubber Manufacturing Co., Chattanooga, Tenn., is ready to receive estimates on heating apparatus. Address Charles Tipton.

Ironworking.—The Good Water Manufacturing Co., Good Water, Ala., will want ironworking machinery.

Lathe.—The Good Water Manufacturing Co., Good Water, Ala., will want engine lathe.

Lathe.—H. F. Miller & Son, Oak and 7th streets, Baltimore, Md., want a lathe, 8-foot bed—16 to 22-inch swing, for die work.

Laundry.—The New York Steam Dye Works, New Orleans, La., will need laundry machinery.

Moulder.—Parrish & Carpenter, Rocky Mount, N. C., want a moulder.

Mower, etc.—J. A. Smoot, Darlington, S. C., contemplates purchasing a reaper and a mower.

Piping.—The Richland Mining Co., Buford, Ga., will want a quantity of 10, 8 and 6-inch spiral riveted giant piping.

Planer.—The Good Water Manufacturing Co., Good Water, Ala., will want an iron planer.

Pyrites Furnaces.—The Little Brothers Fertilizer & Phosphate Co., South Jacksonville, Fla., wants plans, estimates, etc., on pyrites furnaces.

Rails.—J. Jewkes, P. O. Box 1440, Pittsburg, Pa., wants 500 tons 30 or 35 pound second-hand steel rails.

Rails.—M. W. Mason, Norfolk, Va., wants 30-pound T rails and 40 pound flat rails for an electrical railroad.

Rails.—L. O. Smith, New Cumberland, W. Va., wants prices on second-hand and first steel rails of various sizes for heavy traffic.

Rubber-working Machinery.—The Southern Rubber Manufacturing Co., Chattanooga, Tenn., is ready to receive estimates for equipping a factory with rubber-working machinery. Address Charles Tipton.

Sash Machinery.—L. Christensen, Beaufort, S. C., wants estimates on sash machinery.

Saw, Shaper, etc.—Parrish & Carpenter, Rocky Mount, N. C., want a single shaper, scroll saw, self-fed rip saw, 30 inch resaw, etc.

Smoke-burners.—A. E. Bailey & Co., Chattanooga, Tenn., desires addresses of agents of the Walker, Eureka, Fisher and other smoke-burners.

Steel Castings, etc.—Thomas J. Lasier, Washington, D. C. will receive proposals until January 5, 1892, for furnishing at the Washington navy-yard a quantity of gate-valves, steel castings, steel forgings, tin, etc. Blank proposals will be furnished upon application.

Washer.—W. A. Rinehart & Co., Covington, Va., will purchase an ore-washer of 125 tons capacity.

Water-tank or Standpipe.—The Roland Park Co., Blackstone Building, Baltimore, Md., is in the market for a steel storage-tank or standpipe 20 feet internal diameter by 40 feet in height to be set in iron supports 30 feet high.

Water Works.—The City of La Fayette, La., wants specifications, bids, etc., on water-works system. Address Numa Schayot.

VALUABLE TRACT OF

Timber, Anthracite Coal and Iron Ore Property for Sale.

50,000 Acres within 150 miles of Baltimore, convenient to railroads. All virgin forest. White and Red Oak, Poplar, Ash, Hickory, Cherry, White and Yellow Pine. Large portion of tract underlain with Anthracite Coal, 90 per cent. pure carbon and free from sulphur. Heavy bodies of Iron Ore assaying 60 per cent. metallic iron. On market but short time, and if sold soon will be sold at a bargain. For particulars address

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ROANOKE, VA.

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We offer for sale on reasonable terms our entire plant, which is complete in all its parts, comprising Mills, Lands and Railroad Equipment at Bozeman, and City Yard and Contracting Machinery at Birmingham.

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VALUABLE MANUFACTURING PLANT FOR SALE.

In St. Augustine, Fla., to settle an estate, consisting of Factory and Woodworking Machinery, now running. Nine tenement houses. A good investment. Write for particulars.

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Novelty Woodworking Shops FOR SALE.

Situated in Sanford, Fla. Good reasons for selling. A good opportunity for a hustler. Address

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Richmond, Va.

COMMISSIONERS' SALE OF MOST DESIRABLE AND VALUABLE RAILROAD WORKS AND PROPERTY, INCLUDING RIGHT OF WAY, ROAD-BED, TWO HUNDRED THOUSAND DOLLARS IN COUNTY SUBSCRIPTIONS, VALUABLE TRAFFIC CONTRACTS WITH OTHER RAILROAD COMPANIES, AND OTHER RIGHTS AND FRANCHISES UNDER A CHARTER FROM THE LEGISLATURE, IN THE STATE OF VIRGINIA. By virtue of a decree of the Chancery Court of the city of Richmond, pronounced on December 4, 1891, in the two causes depending therein, under the short names and styles of "John C. Batcheller, who sues, &c., vs. Orange-Keysville Railroad Company and *als.*," and "Ellison, Sales & Co., who sue, &c., vs. John J. Granville and *als.*," heard together, we, the undersigned, who were thereby appointed special commissioners for the purpose, will, on

THURSDAY, JANUARY 14, 1892, at 12 o'clock M., in front of the courthouse door in the Richmond City Chancery Court, on the south side of Broad street, between Ninth and Tenth streets, in the city of Richmond and State of Virginia, offer for sale by public auction, the WHOLE AND ENTIRE ASSETS, WORKS AND PROPERTY, RIGHTS AND FRANCHISES OF THE ORANGE-KEYSVILLE RAILROAD COMPANY, INCLUDING ALL OF ITS RIGHT OF WAY, ROAD-BED, COUNTY SUBSCRIPTIONS FROM PRINCE EDWARD AND BUCKINGHAM COUNTIES, VA.: ALL OF ITS RIGHTS AND INTERESTS UNDER CERTAIN TRAFFIC CONTRACTS WITH OTHER RAILROAD COMPANIES OR PARTIES, AND ALL OF ITS PROPERTIES AND RIGHTS AND INTERESTS OF EVERY KIND AND DESCRIPTION WHATSOEVER.

The line of the said Orange-Keysville railroad, as chartered by the Legislature of Virginia, extends from Keysville, in Charlotte county, the junction of the Richmond and Danville railroad and Richmond and Mecklenburg railroad, through Charlotte, Prince Edward, Buckingham, and to some point on the line of the Chesapeake and Ohio railway not further east than Gordonsville and not further west than Rockfish, in Nelson county, in the State of Virginia, with a branch road to Buckingham Courthouse, about eight miles in length. Of this, 10 miles of road-bed from Farmville south towards Keysville has been completed and is ready for ties and rails; and 15 miles additional through to Keysville located; and 10 miles from Arvon, Buckingham county, south towards Farmville about completed and ready for ties and rails, and from the terminus of this 10 miles 8 miles to Buckingham Courthouse has been located. And other surveys have been made along the line. Of the county subscriptions, Prince Edward and Buckingham counties have each one hundred thousand dollars subscribed in bonds; of which \$30,000 to be issued by Prince Edward on the completion of the first ten miles from Farmville to Keysville, and \$40,000 to be issued by Buckingham on the completion of the first 15 miles from Arvon towards Buckingham Courthouse, and so on. Hence, the finishing of the 20 miles already nearly completed and 5 additional miles entitles the company to \$30,000 of these county bonds. The company has five traffic contracts—two with the Chesapeake and Ohio railway, one with the Richmond and Alleghany railroad (division of the Chesapeake and Ohio), and two with the Richmond and Danville road. Commissioner Jackson, Gay in his report in said causes estimates and states the assets of the company, exclusive of the corporate franchises, to be worth the sum of \$236,922.84.

TERMS—\$5,000 in cash to be paid on the day of sale, and \$5,000 in cash to be paid as soon as the sale is confirmed by the Court, and the residue upon three equal credits of one, two, and three years, the purchaser or purchasers to execute his or their bonds for the deferred payments of the purchase-money, payable to the commissioners, and bearing 6 per cent. interest from the day of sale, and the title to all of the said works, county subscriptions, properties, rights, contracts and franchises of said railroad company so sold to be retained until all of the purchase-money therefor has been fully paid and a transfer or conveyance thereof has been ordered by the Court.

MEADE HASKINS,
BEVERLY B. MUNFORD,
F. H. MCGUIRE,
J. RANDOLPH TUCKER, JR.,
R. M. DICKINSON,
Special Commissioners.

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ARCHITECTS and MILL ENGINEERS
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SPECIALTY:

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Analyses of PAINTS, OILS, CHEMICALS, PHOSPHATES, FERTILIZERS, MINERALS, WATERS, PYRITES, ETC., ETC.

EXPERT EXAMINATIONS and Investigations of PROCESSES and CHEMICAL WORKS.

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The Lowry Rock and Ore Breaker.

The question of good roads is attracting much thought throughout the country. Their utility is being appreciated, and as a result the extent of well-built roads is gradually increasing. In the South the "gospel of good roads" is making rapid headway, as is instanced by one Alabama county, which already has 110 miles of macadamized roads and about 40 miles addi-

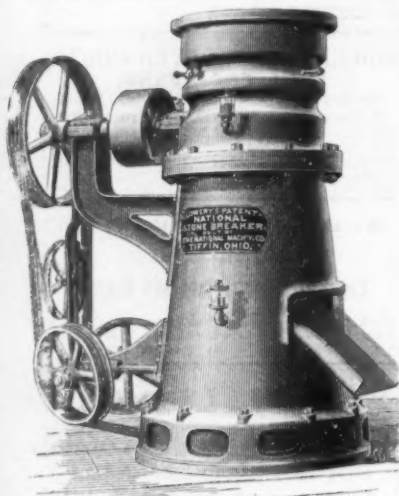


FIG. 1.—LOWRY ROCK AND ORE BREAKER.

tional in process of construction. In building good highways of course an important consideration is the cost, and where machinery and modern methods are introduced an appreciable saving is made. A valuable adjunct to the road builder is an efficient stone breaker—one that is strong and simple in construction with large capacity and high speed.

There are, we are informed, two styles of stone crushers, viz., the reciprocating, where the jaws come together and then retire to get another charge, and the continuous or gyratory. Of the latter class we present an illustration.

This machine is known as the Lowry national rock and ore breaker, and is the invention of Mr. George Lowry. The well known manufacturers of bolt and nut machinery at Tiffin, Ohio, the National Machinery Co., are the builders, and in placing it before the trade advance the strong and sweeping claim that it is "the most efficient yet offered, combining great strength with simplicity and rapid motion." The gyratory continuous process which characterizes the Lowry breaker is said to be especially antagonistic for rapid and exact work. The inventor's long experience in the construction of such machinery has enabled him to comprehend the wants and requirements of quarry owners and difficulties hitherto insurmountable are claimed to be successfully overcome in this improved machine.

The cut shows a radical change in the construction of the machine, combining all the advantages and merits of the earlier make, while eliminating every feature that experience has proved to be objectionable. These machines are said to have extraordinary crushing power, to be simple in construction, substantial in appearance, and, it is believed, possess every mechanical feature to make them powerful and durable. The small crushing cone causes the stone or other material to bear on the outside edges, leaving a hollow space where the sharp blow of the crusher-head is delivered, thus greatly reducing the power necessary to break up the large blocks.

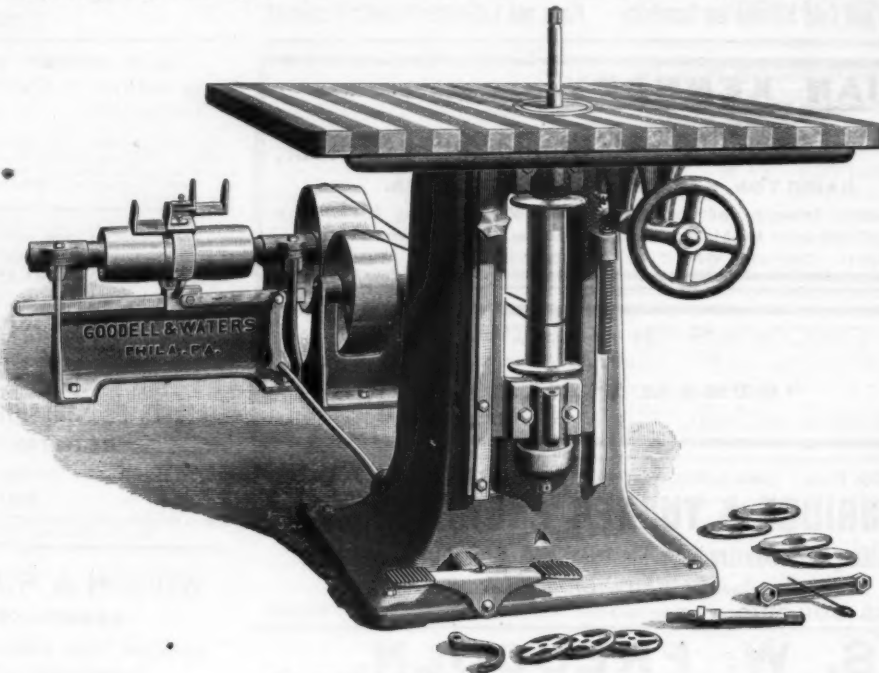
In the Lowry crusher the cracking action is given downwards, in the direction the broken material is traveling, which, it is stated, materially aids the progress, and it

seems that the quicker the speed the more effective the work is done.

The crusher shaft is driven by the system of rope transmission, which is growing in favor, and is said to give the machine a vast advantage in speed. There are many other valuable improvements, namely, the extra long leverage given the crusher shaft, together with the small crusher-head and hopper. Hitherto the prevailing notion appears to have been that a larger breaker-head and corresponding large crushing

it combines rapidity, elasticity and power. This latter, from the long-surface contact and leverage on the rope, is not liable to be noisy or break when at its hard task.

These machines are made in nine sizes, and will produce from 5 tons per hour to 250, according to size. The manufacturers, we learn, propose shortly making a combined breaker and road-roller. Such a combination would no doubt meet with much success. While the Lowry breaker is valuable as a stone crusher, its field of



NEW SINGLE SPINDLE REVERSIBLE SHAPER.

concave would crush more than a small one; now it is stated to be generally admitted, and Mr. Lowry claims to have conclusively proved, that great advantage is to be gained by as far as practicable keeping down the size of crushing-head and concave, the outcome being a larger production of material broken to a more regular size, with very much less power.

The size of stone can be very readily

usefulness is by no means limited to this one employment. It is peculiarly adapted for all kinds of ore crushing, possessing essentials that are desirable for breaking phosphate rock and the different ores found in the South. Its diversity of application is one of its distinguishing features.

MERCHANT & Co., of Philadelphia, importers of tinplate, are noted not only for

A New Single-Spindle Reversible Shaper.

The accompanying cut illustrates a new upright shaper just introduced by Goodell & Waters, of Philadelphia, Pa.

In the single-spindle machine the table is unobstructed, except by the spindle in use. The operator has the free use of the entire top of the table, and avoids the danger of running the work into another cutter. It has a solid cutter, working

equally well whether running to the right or left, so arranged as to be quickly reversed to suit the grain of the wood. The cutting edges are exactly the same and remain so until worn out, insuring a perfect duplicate when reversed, a point difficult to obtain where two cutters are used.

The frame in which the spindle revolves is adjusted vertically by a screw and hand wheel. It is planned to fit into the column, so that the pull of the belt comes against the body of the machine, which tends to prevent jarring.

The countershaft is arranged with an intermediate pulley for the spindle belt to run over, giving the belt an even tension, full bearing and uniform position on the spindle pulley.

It is claimed that the arrangement of the working parts of this machine makes the wear on the face of the spindle pulley even, the running of the spindle light, the reversing easy and quick, and causes less strain on spindle and boxes than any other device.

Additional information will be furnished by the manufacturers from their Philadelphia office, or from their warehouses at No. 227 W. 12th street, Chicago, and No. 29 Spear street, San Francisco, where a full line of woodworking tools is kept in stock. Correspondents are advised to address the the office nearest them.

THE Star Drilling Machine Co., of Akron, Ohio, shipped last week one large size drilling machine to Casper, Wyoming, and another of the same size has just been loaded, and is ready for shipment to the same place. These machines are to be used for drilling for oil, which is found at a depth of from 1,000 feet to 1,600 feet. The manufacturers of this machinery expect to be compelled to run their shops both night and day during the coming winter to supply the demand for oil-well machinery, which will be created by opening up oil properties in different sections of the country.

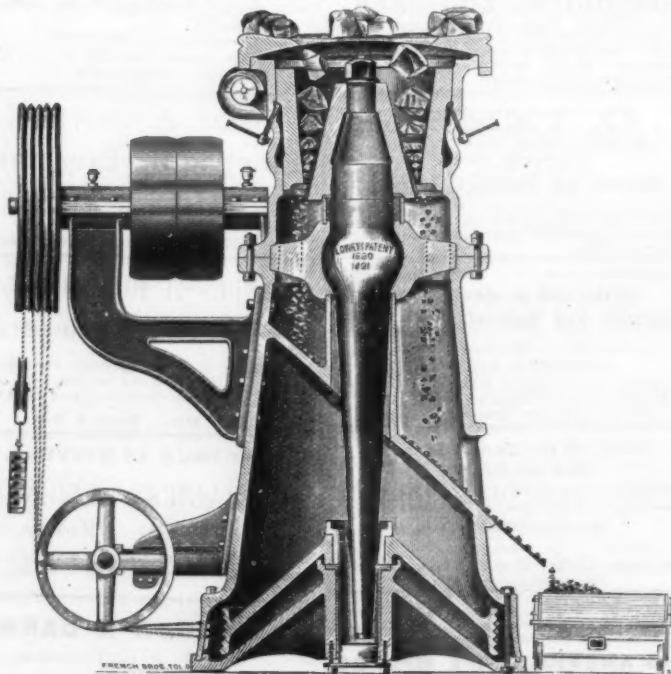


FIG. 2.—SECTIONAL VIEW OF THE LOWRY ROCK AND ORE BREAKER.

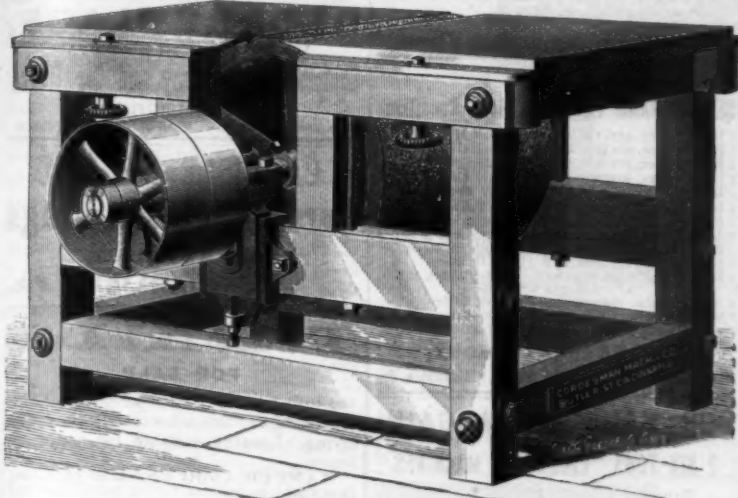
attained or varied by a few turns of the jack screws, more or less as required. These are placed handy on the outside, and can be operated while the machine is at work. Another strong point is that by using the crown top feed, and setting close, the material can be reduced to the smallest size by running once through the machine. The rope drive is a peculiarly happy idea, as

the high grade of their tinplate, but also for the novelty and artistic beauty of every circular or pamphlet which they send out. Their productions in this line would do credit to the most artistic publishing houses in Europe or America. Their latest pamphlet surpasses all their previous record, and that is a very strong statement.

Hand-Feed Sander.

This machine will be found useful for furniture, carriage and other similar wood-working establishments. It is adapted for polishing all forms of woodwork, straight, curved or irregular surfaces, and will produce a smooth and even surface prepared for varnishing.

The frame is made of thoroughly seasoned lumber and fastened together by



HAND FEED SANDER (IRON TABLE).

mortise joints secured by wrought-iron bolts and washers.

The drum or cylinder is provided with a vertical adjustment on both ends of the shaft and is strong and substantial, special efforts being made to have it perfectly balanced and the surface true and even. This surface is covered with carpet or rubber tightly strained to make it pliable.

The manner of fastening the sandpaper to the drum on this machine is a new idea. It consists of two clamping bars fitted in semi-circular grooves, which when drawn together act upon the principle of an eccentric and stretches the paper skin tight to the drum.

The tables are of extra length, made entirely of iron, combining strength with lightness. They are planed true on both sides, and, each one being adjustable, they can be brought very close together or removed to give free access to sand drum for purpose of renewal or repair.

This machine is made by the Cordesman Machine Co., 26 to 36 Butler street, Cincinnati, Ohio, who will furnish further particulars on application.

The Burnished Spinning Ring.

The Whitinsville Spinning Ring Co., Whitinsville, Mass., have perfected and patented a very ingenious device, by means of which rings can be given a metallic burnish like that produced by the traveler.

Trial tests have been and are still being made in various mills, and in all cases, it is stated, these rings have done more than is



FIG. 1.—COMMON RING.

claimed for them. The advantage claimed is a large reduction in waste, besides enabling the spinners to keep up their usual number of sides or ends without the hard work which new unburnished rings cause for the first three months or more. The Textile Record (Boston) gives the result of a recent test on two frames of 160 spindles each as follows: "Time run, 20 hours; No. 29 warp. Whitin gravity spindle making 9,100 revolutions per minute. One and

five-eighths Whitinsville Spinning Ring Co., burnished and unburnished rings, 160 of each.

"The test was made in the worst possible weather for spinning, and for the purpose of showing the results at the most critical time for new rings. On the burnished rings the standard weight of travelers was used—that is, the weight used for the same number of yarn in other parts of the room. Weight of traveler, 10 equal

6 grains. On the unburnished rings, 10 travelers equal 5 grains. Up to the time the first traveler came off on the burnished rings, which was just 20 hours, 430 travelers had been used on the unburnished rings. No doubt the same, or nearly the same, results would be obtained in the



FIG. 2—DOUBLE RING AND CAST IRON COLLAR.

same condition of the atmosphere in any mill.

"This statement is made to show what the effect may be on the spinners, as well as on the work. No spinner wants to put in new rings in the dog-days. The trouble and poor work occasioned by putting in new rings is overcome by using the bur-



FIG. 3—DOUBLE RING AND PLATE HOLDER

nished ring produced by this patent process. No tests that have been made give less than 50 per cent. saved in travelers the first ten days by using burnished rings, and actual tests prove that there is a large saving for several months. Manufacturers who have used burnished rings are



FIG. 4.

satisfied that they are doing all and more than is claimed for them. Further, it seems reasonable to say that the life of the ring will be greater."

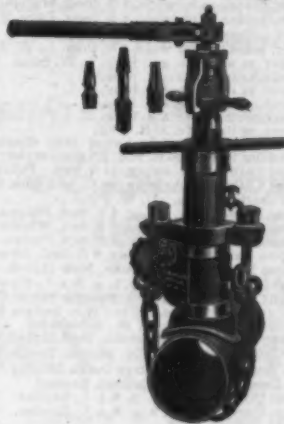
The accompanying cuts show some of the patented specialties of this company, who will be pleased to give further information.

Improved Water-Pipe Tapping Machine.

In 1872 the H. Mueller Manufacturing Co. of Decatur, Ill., patented and placed on the market a water pipe tapping machine which met with general favor. But since that time a number of improvements have been made on the original design, and the manufacturers claim that the machine as now produced is the most complete tapping machine of the age. With this is shown a cut embodying all of the improvements.

It is made entirely of steel and bronze metal combined in such a way as to reduce the wear in the working parts to the lowest point possible.

The ratchet is heavy and strong, being



IMPROVED WATER PIPE TAPPING MACHINE.

made of steel and malleable iron. The wheel and dog are made of steel, drop forged, finished by automatic machinery and then tempered. Every piece of the ratchet is made by automatic machinery to templates, making it possible to reproduce duplicates.

The feed yoke, used for feeding the drill while in operation, is placed under the ratchet handle, allowing the handle to have a full sweep around the machine. This is one of the special features of the machine and enables the operator to stand in the most advantageous position.

There are no ground joints about the

caused by the threads getting battered or filled up with mud in handling.

The machine can be operated in any ordinary ditch without extra excavations and will work in any position on the pipe, top or bottom, or at any point between the two, and the operator can work to the best advantage as he can use the ratchet in any position.

The corporation stopcock can be drilled, tapped and inserted without moving the machine after being clamped in position on the pipe.

During the twenty years that these machines have been in use they have withstood severe tests, and experienced mechanics, as well as hydraulic engineers, have by long practice demonstrated their capacity and efficiency.

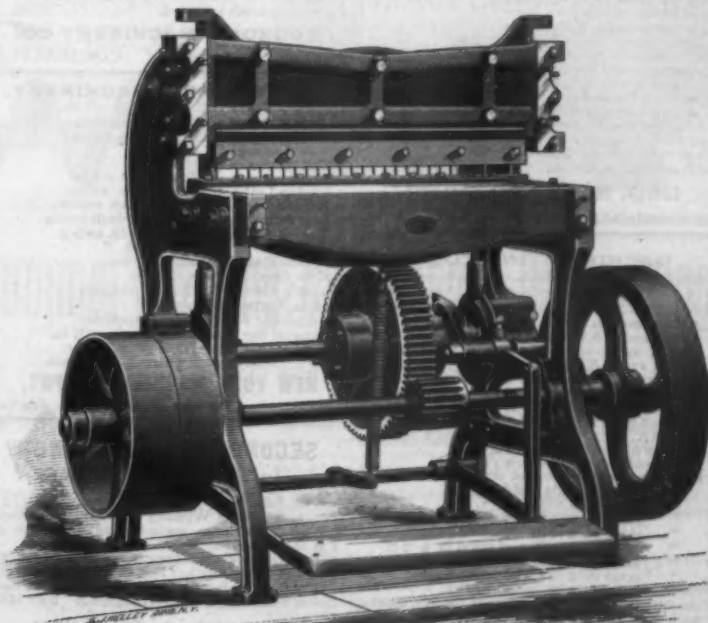
It does not necessarily require skilled labor to operate the machine, and a pipe can be tapped with it without shutting off the water supply.

The manufacturers will be pleased to send descriptive matter and fuller information to all applicants.

A Power Gang Punching Machine.

A machine for punching a row of holes through sheet metal at one operation has been perfected, and is being placed on the market by the Niagara Stamping & Tool Co., of Buffalo, N. Y. The accompanying cut shows one of these machines that will punch 24 holes, 3-16 inch in diameter, through No. 16 gauge iron. These machines are operated by lever or belt-power. The lever machines are suitable for punching only a limited number of holes through No. 16 iron.

The standard size is 30 inches long, with 2-inch throat, and will punch sheets of any length all along the edge. It is provided with a back gauge which is adjustable, while a side gauge gives the exact distance from the last hole punched for the next operation. The punch and die plates can be easily removed and others of different size and location substituted, or single punches can be replaced in case of breakage. By the use of an improved combined pin and friction clutch, the punch can make but one stroke for each depression of the treadle. The manufacturers say that



POWER GANG PUNCHING MACHINE.

valve, but a swinging, rubber-faced, self-adjusting valve is used which will seat itself, it is said, even if there should be some chips or dirt hanging to the valve or valve seat.

The saddles are made of heavy and strong malleable iron, for any size pipe. The machine sets in a recess in the saddle with no threads. This avoids the trouble

special care has been taken to produce a machine of simple construction and combining the necessary stiffness and other requisites which long experience has taught them would be needed in a machine to do the work for which this one is intended.

This machine will no doubt interest sheet metal-workers in all lines, especially stove and furnace-makers and locomotive builders. Further particulars can be had by addressing the manufacturers.

Up Head of Class A

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25 horse-power Electric-Light Engine.
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1 Iron Planer, 16 in. x 16 in. x 3 ft.
1 Planer, 20x30 in. x 4 ft. and 22x22 in. x 5 ft.
1 " 24x24 in. x 5 ft.
1 " 30x30 in. x 5 ft.
1 " 32x32 in. x 10 ft. 42x36 in. x 13 ft.
1 " 36x28 in. x 10 ft.
1 " 72x60 in. x 15 ft. and 50x50 in. x 17 ft.
1 " 30x30 in. x 9 ft., with one head.
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2 Crank Planers. 12 No. 7 Lincoln Pat. Millers.
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1 No. 24 in. Fowler Press. 10 Foot and Power
1 No. 1 Bliss Foot Presses.
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1 36 in. Gear Cutter.
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1 48 in. Gear Cutter. 1 Power Mortising Machine.
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Planer, planes 30 in. wide, 8 ft. long, D. W. Pond.
Planer, planes 30 in. wide, 8 ft. long, Harrington.
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Planer, planes 24 in. wide, 6 ft. long, Harris.
Planer, planes 24 in. wide, 5 ft. long, L. W. Pond.
1 Planer, 24 in. wide, 4 ft. long, L. W. Pond. New
1 Planer, 24 in. wide, 5 ft. long.
1 Planer, 24 in. wide, 6 ft. long.
1 Planer, 28 in. wide, 6 ft. long.
1 Planer, 28 in. wide, 8 ft. long.
1 Planer, 32 in. wide, 10 ft. long.
Gap Engine Lathe, 28 in. swing over shears, 55 in. swing in gap, 26 ft. bed, English m-k.e.
Engine Lathe, 34 in. swing, 21 ft. bed. Putnam.
Engine Lathe, 24 in. swing, 20 ft. bed with three tool shafting rests. D. W. Pond.
Engine Lathe, 18 in. swing, 6 ft. bed, Sheppard.
Engine Lathe, 16 in. swing, 8 ft. bed, Wheeler.
Engine Lathe, 15 in. swing, 8 ft. bed, Porter.
4 Engine Lathes, 20 in. swing, 8 ft. bed, Ames.
Shaping Machine, 9 in. stroke, New Haven.
Upright Drill, 30 in. swing, b. g. & s. f. Hawes.
Upright Drill, 28 in. swing, Putnam Mach. Co.
Bolt Cutting Machine, 1 1/2 in., Wm. Sellers & Co.
Bolt Cutting Machine, 1 1/2 in., Schlenker.
Slotting Machine, 9 in. stroke, New Haven Co.
Pipe Cutting Machine, 4 in., Morris, Tasker & Co.
30 in. Boring Mill, Large Index Milling Mach.
Two Double Stay Bolt Cutters, Cement.
1 28 in. Upright Drill, b. g. & s. f., Snyder. New.
1 36 in. Upright Drill, b. g. & s. f., Snyder. New.
1 Pillar Shaper, 16 in.
1 Horizontal Engine, 10 in. cylinder, 14 in. stroke.
1 Engine, upright, 6x7 in. N. Y. Saf. St. Pow. Co.
1 Engine, upright, 8x9 in. McIntosh & Seymour.
1 Engine, horizontal, 6x10 in. Rice Automatic.
10 horse-power Westinghouse Engine.
15 Horse-Power Upright Boiler.

GEORGE PLACE,

No. 120 Broadway, NEW YORK.

Second-Hand Machinery FOR SALE.

Woodworking Machinery—3 3/4 in. Band Saws.
Fay 6 in. 4-side Moulder. Fay 24 in. Planer.
Stouton and McParlain 26 Endless Bed Planer.
2 Rip and Cross-cut Saws Tables, Axe Handle Lathe.
72x18 Steel Tubular 64 1/2 in. tubes complete; used 20 months.
25 H. P. Fire Box Boiler, 34 1/2 in. tubes complete.
Stationary Tubular, 11x42, complete.
Two-Flue Boilers, 20x40, 24x44, 24x48, complete.
Engines 10, 12, 14, 16, 20, 25, 30, 40, H. P. complete.
Steam Pumps, Shafting, Pulleys, Hangers, Belting, Ingersoll No. H Rock Drill.
Iron Planers 20 in. x 22 in. x 3 ft. and 30x36x7 ft.
Miscellaneous Machinery of all kinds.
Correspondence solicited.

ECONOMY MACHINERY CO.

104 East Pearl Street, CINCINNATI, O.

SECOND-HAND MACHINERY.

1 Planer, planes 17 ft. long, 62 in. x 36 in.
1 Planer, planes 9 ft. long, 36 in. x 36 in.
1 Planer, planes 8 ft. long, 30 in. x 30 in.
1 Planer, planes 6 ft. 24x24 in.
1 Planer, planes 5 ft. 24x24 in.
1 Planer, planes 4 ft. long, 19 in. x 19 in.
1 Engine Lathe, 16 ft. bed, 18-in. swing.
1 Engine Lathe, 9-ft. bed, 24-in. swing.
1 Engine Lathe, 16 feet bed, 28 inch swing.
1 Engine Lathe, 10-ft. bed, 25 in. swing.
1 10 inch Plain Drilling Machine.
1 26 in. Stevens' Pulley Lathe.
1 9 inch Hewes & Phillips Shaper.
1 48-in. Vertical Boring Mill.
1 Automatic Rack-Cutting Machine.
1 General Bar Iron Shears, cuts 4x1 1/2 in.
1 11 ft. 24 in. Stover Dimension Planer.
Send for list Second-hand tools.

NEW YORK MACHINERY DEPOT,

Brooklyn Bridge Store, 16, New York.

SECOND-HAND MACHINERY

In First-Class Condition.

1 26 in. Egan Double Surface Rotary Bed.
1 24 in. Baxter D. Whitney Dbl. Surf. Roll Feed.
1 Waymouth Lathe, made by Rollstone Mch. Co.
1 55 in. Sturtevant Shaving Exhauster.
1 26 in. Old Style Whittey Scraper and Grinder.
1 30 in. Double Leather Belt 50 ft. long, both good
1 24 in. Double Leather Belt 51 ft. long, as new.
Lot of Shafting, Pulleys, Hangers & hair Mch.

BAXTER D. WHITNEY,
WINCHENDON, MASS.

FOR SALE.

1 6-Roll Single Surface Planer and Matcher.. \$275
1 4-Roll Single Surface Planer and Matcher.. 200
1 Pay Power Mortiser with Boring attachm't 135
1 Lane & Bodley Railway Cut-Off Saw, large 70
2 Fay & Co. No. 5 14-inch 6-Roll Fast Feed Flooring Machines, each. 50
1 Rogers 2 Spindle Shaper Wood Tap..... 65
1 Scroll Saw..... 50
1 4-inch Centrifugal Pump..... 60
1 No. 6 Sturtevant Blower, with counter.... 85
1 Colburn 2 Spindle Blend Boring Machine... 35
1 24-inch Double Surface, with counter..... 350

JAMES JENKS,

109 Jefferson Avenue, DETROIT, MICH.

Second-Hand MACHINERY.

Planer, 24x7 ft. Pond, latest pattern. Ar.
26x6 ft. Pond. Good order.
36x12 ft. New Haven. Good, cheap.
42x14 ft. Gleason. Good order.
72x25 ft. Betts. Good order.
Engine Lathe, 72 in. x 8 ft. Old Style. Fair, cheap
" 60 in. x 20 ft. " Fair, cheap
" 33 in. x 15 ft. " Good ord.
" 25 in. x 12 ft. New Haven. "
" 24 in. x 14 ft. Old Style. "
" 12 in. x 10 ft. Gleason. "
" 16 in. x 6 ft. Ames. Special feature.
Shaper, 15 in. stroke. Hendey. At order.
1 9 in. stroke. Hewes & Phillips s. G. O.
Screw Machin s. No. 1-5. Brown & Sharpe. G. O.
Boiler Plate Planer, 18 ft. Modern. Good order.

J. J. McCABE,

68 Cortlandt St., NEW YORK.

FOR SALE

SECOND-HAND PLANERS. Good Condition

1 Iron Planer, 42x41 in. x 23 ft., Double Head, Miles
1 Iron Planer, 36x36 in. x 16 ft., Wm. Sellers & Co.
1 Iron Planer, 36x36 in. x 16 ft., Frederic Miles.
1 Iron Planer, 30x30 in. x 12 ft., Wm. Sellers & Co.
1 Iron Planer, 30x30 in. x 12 ft., Wm. Bishop.
1 Iron Planer, 24x24 in. x 16 ft., Wm. Bishop.
1 Iron Planer, 22x22 in. x 15 ft., Frederic Miles.
1 Iron Planer, 20x20 in. x 15 ft., Wm. Sellers & Co.
1 Iron Planer, 16x16 in. x 15 ft., Frederic Miles.
1 Iron Planer, 16x16 in. x 14 ft., Wm. H. Barr.
1 Iron Planers 16x16 in. x 12 ft., R. A. Belden & Co.
STEAM HAMMERS.
2 00-lb. Steam Hammers. Frederic Miles.
1 800-lb. Steam Hammer. Frederic Miles.
1 200-lb. Dead Stroke Hammer. Justice & Shaw.

L. F. SEYFERT'S SONS,

No. 437, 439 441 N. Third St., Philadelphia, Pa.

FOR SALE—A BARGAIN.

2 SIX TONS "LINDE" ICE MACHINES,

Driven by a Corliss Engine.

Just the Plant for a Brewery.

TAMPA ICE CO., Tampa, Fla.

FOR SALE

AT A BARGAIN. The entire Machinery of the BATTLE CREEK KNITTING CO. A COMPLETE OUTFIT in an excellent location for the manufacture of Hosiery. Will be sold with or without the plant.

BATTLE CREEK KNITTING CO.

BATTLE CREEK, MICH.

FOR SALE.

Wagon Skein and Long Arm Axle Plants.
Patterns, Fasks, Machinery and Tools for manufacturing Wagon Thimble Skeins.
Also for manufacturing Wagon Axles.
Particulars on application.

THE JAS. L. HAVEN CO.

No. 57 Plum Street, CINCINNATI, OHIO.

FOR SALE.

CORLISS ENGINE.

Diameter of Cylinder, 14 inches; Length of Stroke, 30 inches. Used about three years; good as new; can be seen running.

GEORGE PLACE,

120 Broadway, New York.

SECOND-HAND

Cotton and Woolen Machinery

Of every description bought, sold and exchanged. Catalogues issued quarterly.

O. B. ARNOLD,

86 Washington Street, CHICAGO, ILL.

NEW YORK EQUIPMENT CO., 15 Wall Street, New York,

SPECIAL BARGAINS. SOUTHERN DELIVERY.

FOUR 8-WHEEL PASSENGER TYPE LOCOMOTIVES built by BROOKS LOCOMOTIVE WORKS, weight about 43 TONS, Cylinder 17 x 24 inch., have WESTINGHOUSE AIR BRAKES, and other useful extras. They are very superior engines.

ONE HUNDRED 34 FEET 20 TON VENTILATED BOX CARS, and ONE HUNDRED 34 FEET 20 TON FLAT CARS, with Gould couplers.

Engines and Cars have been in use only a few months, and can be delivered immediately.

FOR CASH, or on easy terms, on the CAR TRUST PLAN.

SEND FOR CATALOGUE

OLD & NEW RAILWAY EQUIPMENT

A. S. MALES & CO.

CINCINNATI, O.

FOR SALE. RAILS, SPIKES, FASTENINGS, FROGS, SWITCHES AND CROSSINGS, LOCOMOTIVES, DUMMIES, CARS, WHEELS and AXLES.

Complete Outfits for Logging Roads and Street Railways. New and Second-hand.

WILLIAM MINNIGERODE, Dealer in **Railway Supplies,**
Lynchburg, Va.

RAILS—Selected

SECOND-HAND.

45 tons 16-lb. Steel. 35 tons 20-lb. Iron.
125 tons 20-lb. Steel. 35 tons 30-lb. Iron.

Suitable for Southern or Western Delivery.
Above owned and offered by

ROBINSON & ORR,

Pittsburgh, Pa.
NEW RAILS OF ALL WEIGHTS.

Established 1855.

GEORGE PLACE,

Late the George Place Machinery Co.

Equipment of Railway and Car Works
EQUITABLE BUILDING,
130 Broadway, NEW YORK

CARLISLE MFG. CO.

Cars, Engines, Frogs

AND SWITCHES,

CARLISLE, PA.

T RAILS

FOR SALE.

2,000 tons, in lots to suit, 60-lb. steel, second hand, first-class condition for relaying. Located suitable for ocean delivery.

WANTED.—500 tons 30 or 35-lb. second-hand steel.

J. JEWKES,

P. O. Box 1440, Pittsburgh, Pa.

STEEL RAILS

And Track Material complete for Logging and Mining Roads and Industrial Enterprises on the

Instalment Plan.

Payment, cash margin 25 per cent., balance monthly for 24, 36 or 66 months. Also

Locomotives and Cars

On same terms. Second-hand Rails purchased.

The STEEL RAIL SUPPLY CO.

HUMPHREYS & SAYCE, Mgrs., 10 Wall St., New York.

We have no Agents.

BARGAINS.

5 New Automatic Engines, 12 horse-power.
1 18 in x 4 in. Corliss Engine.
1 44-in. Radial Drill, almost new.
7 pairs Iron Shears.
40,000-lb. Rolling Mill Fly Wheel.
Pumps for Mines, Mills, Boiler Feed, Fire, &c.
Boilers 110, 90, 85, 80, 70, 50, 40, 15 horse-power.
Horizontal Upright, Cylinder Boilers, &c. Engines all sizes.

CHESTER BERTOLETTE & CO.
NORRISTOWN, PA.

If you wish to keep posted on the progress of the South, read the MANUFACTURERS RECORD. Price \$2.00 a year.

TRADE NOTES.

THE Webster Manufacturing Co., founders and machinists of Chicago, are sending out with their compliments "a portfolio of the World's Columbian Exposition," a beautiful lithographed pamphlet in colors, with illustrations and full descriptions of the World's Fair buildings and grounds. If you want to know all about the Fair and its splendid buildings this little pamphlet will tell you the whole story.

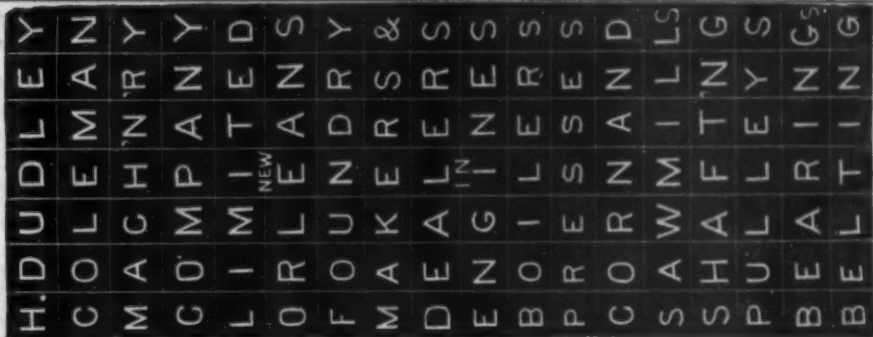
In a former issue a comprehensive report was given of a twist machine lathe as manufactured by P. Frybail, of 512-524 W. 41st street, New York. One of the recent attachments, of which no mention was made, is the "fluting attachment," that is worthy of special attention. Its advantages are that it is easily adjusted to the parent machine in two minutes, and that it gives an attractive and completed finish to the design. A price list and illustrated matter pertaining thereto will be mailed on application by addressing the manufacturers.

THE Ball Engine Co., of Erie, Pa., has placed three of its largest compound engines with the electric-light plant that is being erected at Key West, Fla. At Chicago a 35 horse-power engine of the same manufacture has been installed with the Lerderath Ceramic Co.; an 80 horse power engine with the Ohio Baking Co., of Cleveland, Ohio; a 150 horse-power engine with the Lawrence Gas & Electric Co., of New Castle, Pa.; a 100 horse-power cut-off Ball engine with the Cleveland Hardware Co., of Cleveland, Ohio, and an 80 horse-power Ball engine with the Union City Electric Light Co., of Union City, Tenn.

THE Harriman Furnace Co., of Harriman, Tenn., offers in our advertising columns \$200,000 of its 8 per cent. cumulative preferred stock of the par value of \$100 a share. The proceeds from the sale of \$250,000 of common stock that has been subscribed and paid in and \$250,000 of preferred 8 per cent. cumulative stock, \$50,000 of which amount has been subscribed, is to be used in the erection of blast furnaces for the manufacture of pig iron. Harriman claims many advantages for iron making, and those who wish to investigate the matter can obtain full particulars from Mr. A. A. Hopkins, secretary.

WM. C. CODD, of Baltimore, Md., (2010-2012 Aliceanna street) whose advertisement appears elsewhere in this issue, announce a large and varied stock of mill, machinists and plumbers' supplies. This firm has been favorably known for many years, enjoying the confidence of a patronage extending in every section. They are the selling agents for the Valley Iron Work's automatic engines. An engine that is constructed with the greatest care and precision in all the details of its parts, and possessing improvements of the latest character, which should commend its use to those needing power machinery. Correspondence is invited that the advantages of this engine may be fully set forth. Very low prices will be offered, and immediate shipment positively assured.

Few people realize the magnitude of the shipping interests of the Lakes, and the statement that it would require 42 per cent. of the entire railway freight equipment of the country to handle the traffic that is carried on the Lakes during the open season, of about 235 days, is almost beyond belief until the statistics showing the magnitude of this business are studied. A very instructive pamphlet, covering this subject and showing also something of the magnitude of the ship-yards on the Lakes as illustrated by the big steamships which they turn out, has just been published. It



THE BEST INJECTORS IN USE.

Adapted for All Conditions. High or Low Steam. Long Lift or Short. Water Works Pressure or Tanks. It Always Works.

It is the EASIEST TO HANDLE, being

OPERATED ENTIRELY BY A SINGLE LEVER.

Each Injector is carefully tested before leaving the factory and is

GUARANTEED RELIABLE.

AMERICAN INJECTOR CO., Manufacturers,

DETROIT, MICH.

WHOLESALE AGENTS:
RUMSEY & SIKEMEIER, St. Louis, Mo.
THE AHRENS & OTT MFG. CO., Louisville, Ky.
MILNER & KETTIG, Birmingham, Ala.



CORN and FEED MILLS

WITH FRENCH BUHR AND ESOPAS STONES.

Capacity 6 Bushels to 75 Bushels Per Hour.

ROLLER MILLS

FOR FLOURING MILLS

Capacity from 20 to 100 barrels per day.

Mills for Grinding PHOSPHATE ROCK.

WATER WHEELS, SHAFTING, PULLEYS, HANGERS, ETC.

MUNSON BROS., UTICA, N. Y., U. S. A.

THORNBURGH & GLESSNER, 110-112 S. JEFFERSON STREET, CHICAGO, ILL.

OFFICE AND SALESROOM:



MILL and ELEVATOR

Supplies and Equipment.

ELEVATORS, FLOUR AND CORN MILLS, COTTON SEED MILLS, Etc., Fully Furnished and Equipped Throughout.

Steel Screw Conveyor.



PHOSPHATES, COAL and MINERAL SPECIALTIES.

is entitled "The Twenty Foot Channel," its object being to show the reasons why Congress should deal liberally with Lake improvements. The MANUFACTURERS' RECORD is indebted to the Detroit Dry Dock Co., of Detroit for a copy.

THE Cambridge Roofing Co., owning and operating factories in Cambridge, Ohio, and Chattanooga, Tenn., claim to be one of the largest manufacturers of iron and steel roofing in the world. Their specialty is Crowl's patent standing seam steel roofing, which finds a ready sale, and is recommended by architects and builders all over the country. Corrugated iron, both painted and galvanized, standing seam iron roofing, V crimped iron roofing, iron weatherboards, beaded iron siding and ceiling, roofing paints, eave trough, conductor, etc., are also turned out in large quantities by these works. Chattanooga's shipping facilities, with ten railroads, gives the company very superior facilities for distribution, enabling all points to be reached quickly and at a low freight rate. Persons interested in these materials will find a new catalogue issued by the Cambridge Co. of value.

Cummer's Drying, Calcining & Pulverizing

MACHINERY APPARATUS and PROCESSES for

DRYING PHOSPHATE

Clay, Marl, Etc.

Rock and Pebbles, also separates same from clay and other impurities without water. Capacity 10 to 20 tons per hour. Also, dries clay for Brick Making, Pottery, etc., as it comes from bank, for 5 cts. per ton. Also, nearly all kinds of very wet and sticky materials.

CALCINING PHOSPHATE

Gypsum, Etc.

Rock and Pebbles, at any temperature from 500° F. and higher, very cheaply and rapidly. Also, Gypsum, Rock, etc. Labor dispensed with. Material handled by machinery.

SEPARATING

All Dry Ground Minerals, Dry Paints, Etc.

Ground Phosphate Rock to 80 mesh absolute, and finer. Also, separates ground Portland Cement, Water Lime, and nearly all dry pulverized minerals, at the rate of 10 to 20 tons per hour, with less than one H. P. Also, separates Ground Dry Paints to any fineness wanted.

FINE PULVERIZING

Dry Paints, Etc.

Of Phosphate Rock. For this and for Dry Paint Grinding we make decidedly the best machine. Has large capacity, is durable. No journals in machine or exposed to grit. Is a reliable, every-day machine.

"Dry Process"

PORTLAND CEMENT

Works.

We will furnish plans for "Dry Process" Portland Cement Works, and all necessary machinery and apparatus for making same, to actual "bona fide" customers.

DRY KILNS

For drying Bricks, Tile, Terra Cotta, etc. Two to five times as much drying done with any given amount of fuel as by any other method with which we are acquainted.

Manufactured for U. S. exclusively by

FRONTIER IRON WORKS, Detroit, Mich.

Sold exclusively by

F. D. CUMMER & SON, Detroit, Mich.

TRADE NOTES.

THE swinging hose-rack, made by J. C. N. Guibert, 115 Broadway, New York, have recently been supplied for use in the City Hall, Wichita, Kansas, and for the Hotel de Logerot, of New York city.

LARGEST GIRDER IN THE WORLD—What is said to be the largest girder in the world was placed in position yesterday over the Mattabessett river at East Berlin. It is 102 feet 6 inches long, 6 feet deep, and weighing over 50 tons. It was manufactured by the Berlin Iron Bridge Co., of East Berlin, Conn.

THE Globe Co., of Cincinnati and New York, manufacturers of office furniture and appliances, is sending out a neat little calendar which is suggestive of its business. It is a fac simile of the cabinet indexes made by this company, and through its pages are to be found cuts of some of their specialties in office fixtures.

ONE of the most beautiful pamphlets descriptive of a Southern hotel, which the MANUFACTURERS' RECORD has ever received, has been issued by the Leland Hotel Co., proprietors of "The Oglethorpe," Brunswick, Ga. Anyone contemplating a trip to the South for the winter will find that this pamphlet presents a very alluring picture of Brunswick's attractions.

THE Cordesman Machine Co., Cincinnati, Ohio, lately furnished a lot of special machinery for the manufacture of banjos, guitars, etc., to the John Church Co., of Cincinnati. This is a new departure in this branch of business, as heretofore all such instruments were usually of foreign manufacture and were imported into this country cheaper than they could be made here.

THE American anti-friction metal is largely used by well-known concerns throughout the United States. This statement indicates its value. It is adapted for bearings of locomotives, passenger, freight and street cars, marine and stationary engines, roll neck, bearings, thrust pins, slide valves, cross-head gibs, piston rods, saw mill bearings, etc. The advantages consequent to its use are said to be increase of motive power, saving of 60 per cent. in oil, does not heat or cut, stands the highest rate of speed, etc. Its specific gravity is 11.49, and its crushing resistance 112 tons. The widely-distributed testimonials received by the manufacturer, the American Anti-Friction Metal Co., Mobile, Ala., demonstrate the great utility of this metal, which is claimed to be the only self-lubricating and anti-friction metal.

J. S. GRAHAM & Co., of Rochester, N. Y., have recently built for the Scranton (Pa.) Lathe Turning Co. four of Burke Bros.' special automatic turning machines, one No. 1, two No. 2 and one No. 3. These machines are for the purpose of automatically turning round, square, hexagon and octagon, and the various sizes will turn from the smallest spindle to an 8-inch porch column or Newell post. They are new in principal, automatic in operation, simple to operate and adjust. One machine will turn 600 stair balusters, hexagon in form, in 10 hours and 200 porch columns from 6x6-inch stock, making them hexagon in shape; round and squares can be worked faster, and octagons a trifle slower. These machines being practical and simple and producing a large variety of patterns, will undoubtedly be in active demand. This firm is also at work on an order for a set of these machines for Orren Weston, Tonawanda, N. Y.; a set for Woods, Jenks & Co., Cleveland, Ohio. Other special machines are being built by them, and they report business for general woodworking machinery improving.



The COLLIAU PATENT Cupola Furnace.

Adapted to all Foundries.
The Most Economical.
The Lowest in Price.

MANUFACTURED EXCLUSIVELY BY

BYRAM & CO.
DETROIT, MICH.

BUILDERS WIRE & IRON WORK

of every description. I have just issued my 25th Annual Fall Catalogue of Roof Cresting, Tower Ornaments, Finials, Weather Vanes, Stable Fixtures, Stall Guards, Hay Racks, Oat Mangers, Gutters; also Window Guards, Balcony Railings, Jail Cell Work and Ornamental Brass, Wire, Iron and Bronze Work of every kind; Office and Counter Railings of Latest Designs. I ship goods all over the U. S., and fill orders from measurements sent by mail. Catalogue free.

E. T. BARNUM, Detroit, Mich.

TAYLOR.

BEST YORKSHIRE BAR IRON,

The best material for Staybolts, Piston Rods, Crank Pins, etc.

USED BY LEADING RAILROADS.

Sole Representatives in the United States,

B. M. JONES & CO.

11 and 13 Oliver Street, BOSTON.
143 Liberty Street, NEW YORK.

WHEN YOU NEED
DAMPER REGULATOR
EXHAUST HEAD
EXHAUST OIL EXTRACTOR
STEAM SEPARATOR
SHAKING GRATE BAR
EUREKA PACKING

YOU NEED

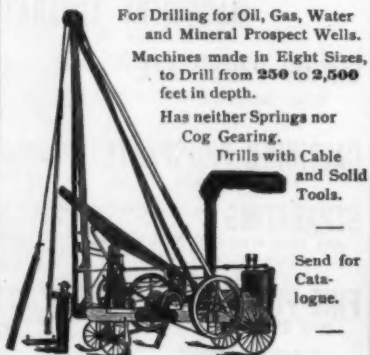
RELIANCE WATER COLUMN
GARLOCK PACKING
FEED WATER HEATER
WASTE OIL FILTER.
ARC INDICATOR
\$25
STEAM FLUE CLEANER
Send for Illustrated Catalogue.

HINE & ROBERTSON,
54 Cortlandt Street, NEW YORK.

ARE YOU AFTER MONEY?

THEN BUY A

Star Portable Drilling Machine



STAR DRILLING MACHINE CO.
AKRON, OHIO.

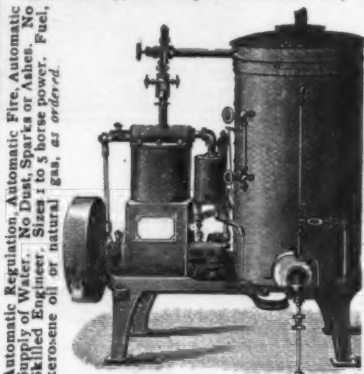
Manufacturers of Drilling & Fishing Tools,
Also Oil Well Supplies.

FOR SALE—TWO 73 H P LOCOMOTIVE BOILERS, complete. Can be seen in operation. PICTET ICE WORKS, Cleveland, Ohio.

5 TON SCALES
\$60
Beam Box Tare Beam
ALL SIZES
Send for Terms

JONES OF BINGHAMTON
N. Y.
HE PAYS THE FREIGHT

After being on the market 6 years,
The Acme Still Leads
In Durability, Efficiency and Fuel Economy



ROCHESTER MACHINE TOOL WORKS,
Sole Builders, ROCHESTER, N. Y.
Send for Illustrated Catalogue.

The Metropolitan Automatic Injector.



The only Automatic Injector that is operated entirely without the use of any globe valves.

TO START—Open Valve K.
TO STOP—Close Valve K.

It can be used either as a lifter or non-lifter. It is adopted by the largest Engine Builders, and is for sale by the LARGEST SUPPLY HOUSES IN THE U. S. Ask your dealer or send to us for circular and prices.

JENKINS BROS., 71 John St., New York.

"Genuine Merit Will Tell."

This truth is constantly exemplified by the

Remington Standard TYPEWRITER.

Every detail of the Remington is a tested part—every completed Machine a piece of finished mechanism.

The Remington of to-day is the realized ideal of a practical, durable and wholly satisfactory Writing Machine.

A combination of experience, energy, skill and capital has made and will keep the

Remington Standard TYPEWRITER

The best Writing Machine for every practical use to which a Typewriter may be applied.

WYCKOFF, SEAMANS & BENEDICT,

15 N. CHARLES STREET



"IMPROVEMENT OF THE ART"

For 16 years all users of typewriters have felt the necessity of their being improved. You will find in the SMITH PREMIER TYPEWRITER the latest and best. All the essential features greatly perfected and important improvements. The best inventive talent and mechanical skill have been employed to produce a machine of Greater Durability, Excellence of Design and Special Features. We claim, and inspection and trial prove it, the Most Durable in Alignment, Smoothest Running and Most Silent. All types cleaned in 15 seconds without setting bands. Send for catalogue. THE SMITH PREMIER TYPEWRITER CO., Syracuse, N. Y., U. S. A.

SUCCESS Water Wheel.



This Wheel is strong and durable. Excelled all other wheels in the great trial tests. Is in use all over the nation. I also make a specialty of **HEAVY GEARING & MACHINERY**

For Paper, Cotton and Grist Mills.

S. MORGAN SMITH, York, Pa.

THE BRIDESBURG MACHINE WORKS TEXTILE MACHINE MAKERS.

Worsted Machinery, Wool Machinery, Cotton Machinery, Built to Order.

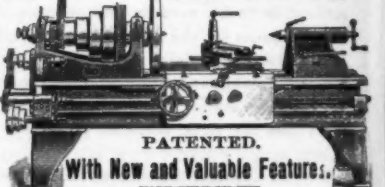
HIGH GRADE | **WILLIAM E. MCGILL,**
WORK ONLY. | Bridesburg, Philada., Pa.
Repairs for Bridesburg Machinery furnished promptly.

"THE SINTZ"
Gas and Gasoline Engines,
STATIONARY and MARINE
Makes its own supply of gas from gasoline, and at less expense than any other engine. No boiler, coal or fireman required. Runs with either manufactured or natural gas. Specially adapted for small boats and launches and electric light work. Circulars free. Mention this paper.
CLARK SINTZ, Mfr.,
SPRINGFIELD, OHIO.

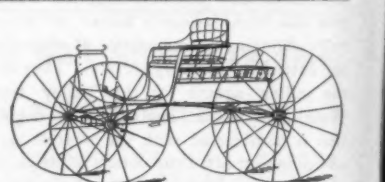
GAS and GASOLINE ENGINES STATIONARY and PORTABLE. All Sizes.

Dwarfs in Size, but
Giants in Strength.
Expense one cent an hour per horse power and requires but little attention to run them.
Every Engine
Guaranteed. Full
particulars free by mail.
Mention this paper.
VAN DUZEN
GAS & GASOLINE ENGINE CO. Cincinnati, O.

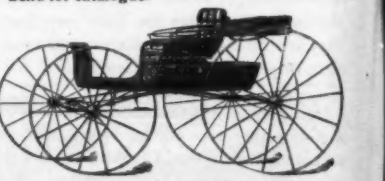
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PATENTED.
With New and Valuable Features.
MADE ONLY BY THE
BRADFORD MILL CO.
8th & Evans, CINCINNATI, O.
Photographs and Prices on application.



Our many new styles and large variety will interest every purchaser of vehicles.
Send for catalogue.



H. H. BABCOCK COMPANY,
FINE CARRIAGES

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What does he see?

This gentleman, after having spent a pleasant hour peering through a crack, has just seen a boy post up on the far-side of this enclosure the following sententious and soul-satisfying announcement:

SPECIAL ANNOUNCEMENT!


The Management regret to announce that the Exhibition promised for this day has been unavoidably postponed **ONE WEEK**, to enable them to make such repairs to the fence enclosing these grounds as will secure the privacy essential to the success of their enterprise.
P. R. O'CRISTINATOR, Supl.
All Tickets will be redeemed at the office.

Consolated by the thought that the time lost was not his—he works by the day on a job in the immediate neighborhood—the gentleman slowly removes his eye and retires, with the fixed determination of being here again *next week*. Not that he cares an atom to know what is to be shown *next week* on this spot, but simply does not intend to have his curiosity excited for nothing.

AS A MATTER OF FACT
VERY FEW ARE SATISFIED WHEN
THEIR CURIOSITY *IS NOT*.



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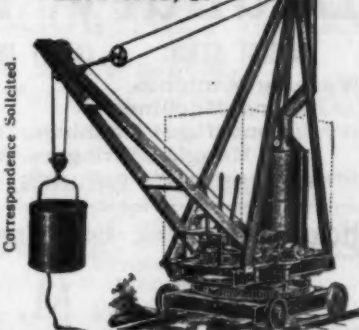
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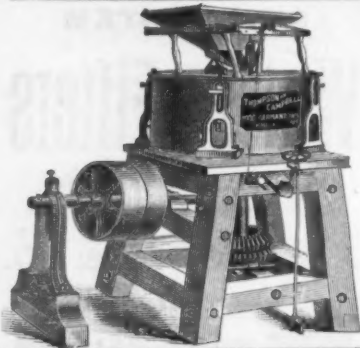
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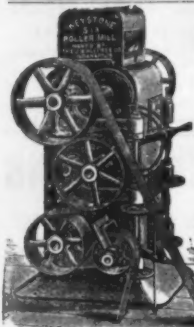
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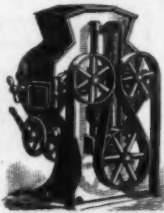


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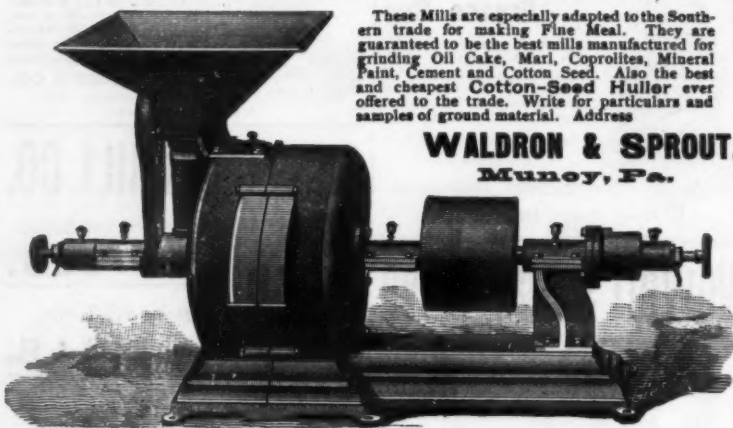


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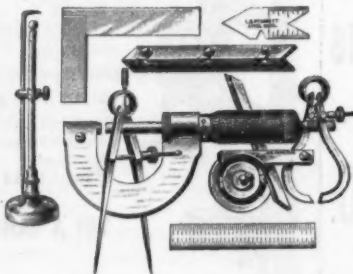
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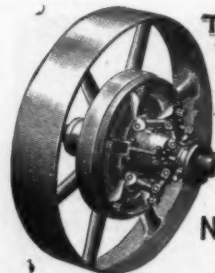
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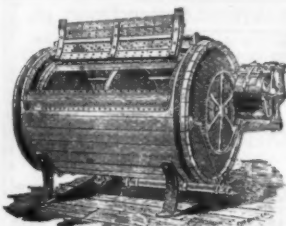
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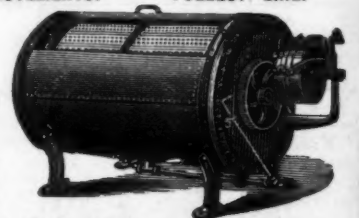
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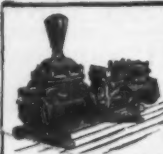
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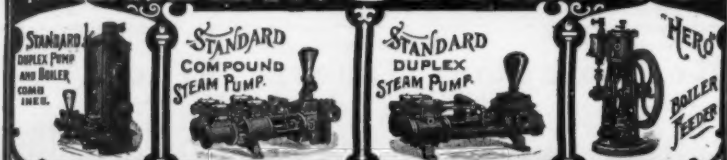
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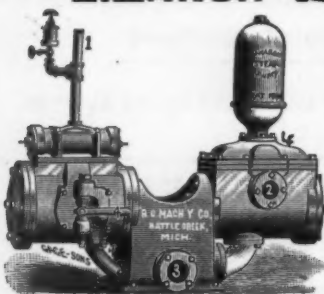
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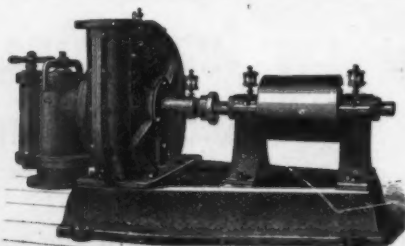
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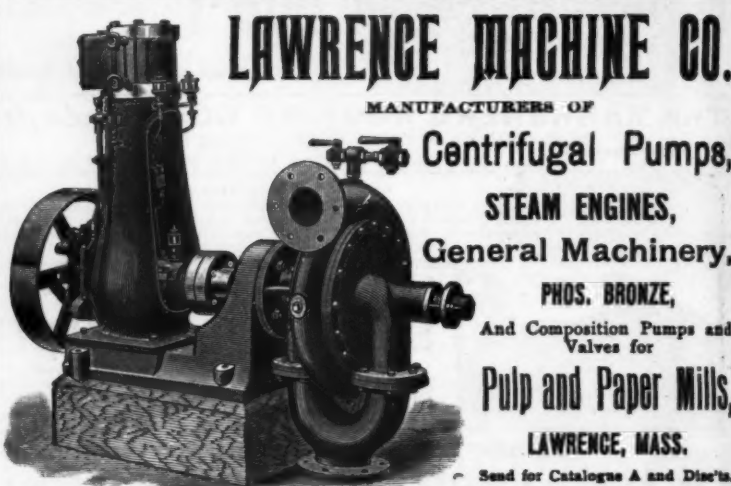
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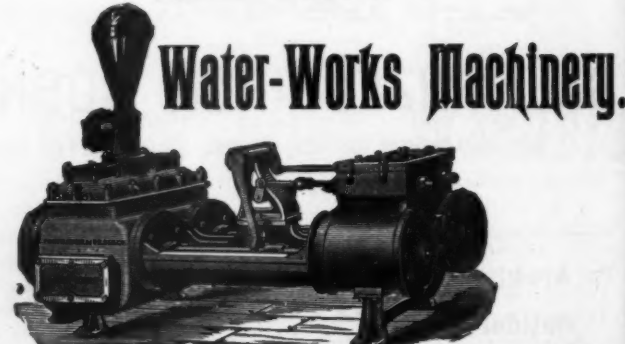
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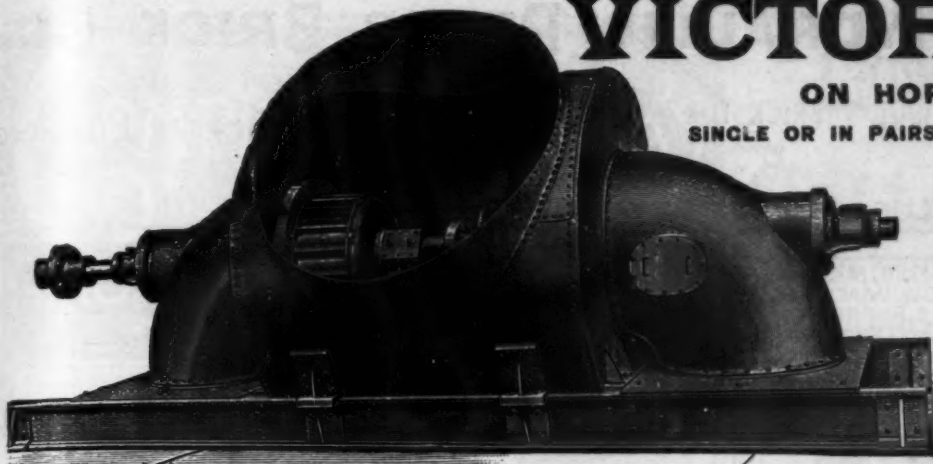
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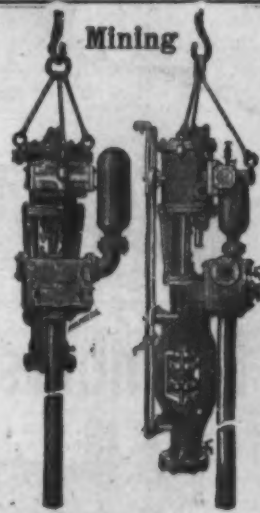
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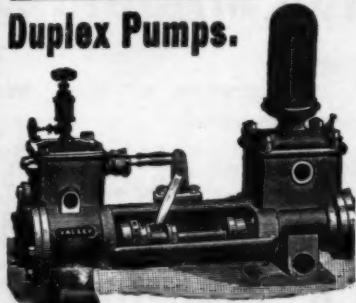
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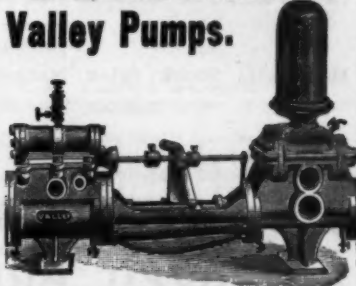
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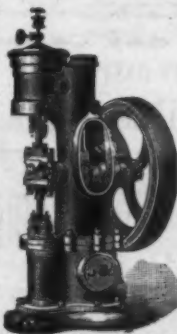
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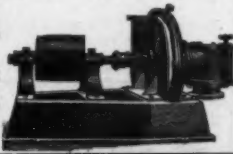
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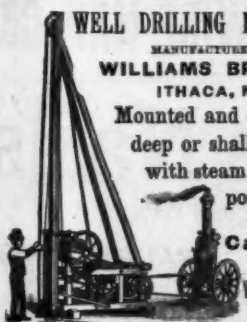
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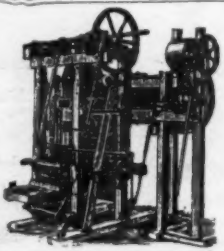
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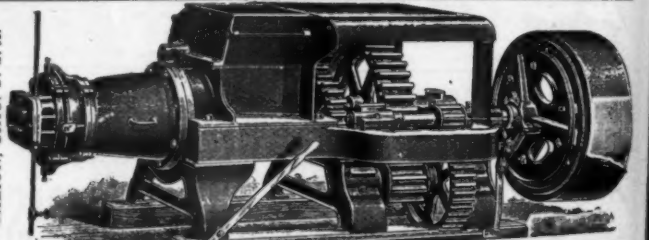
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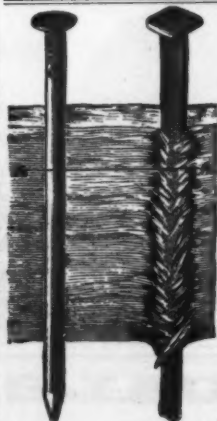
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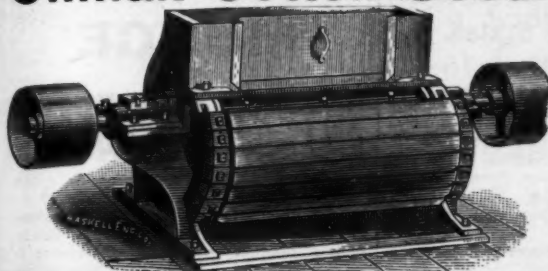
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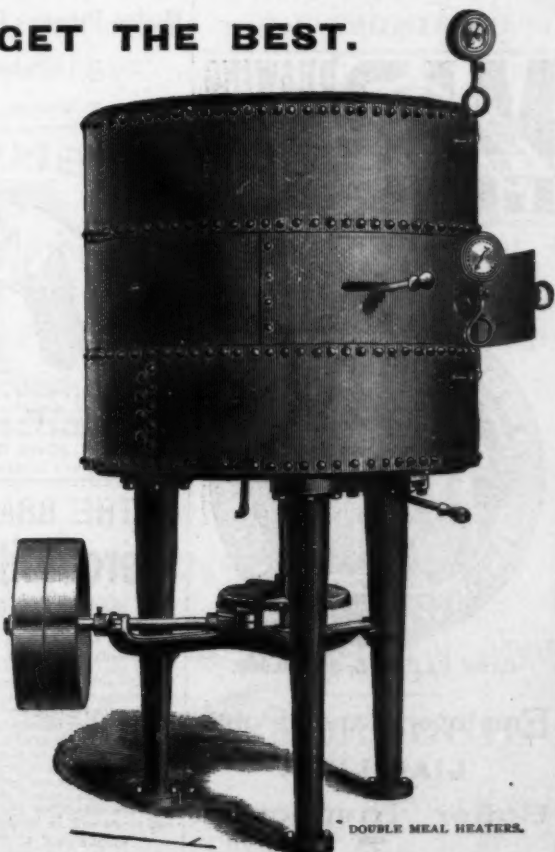
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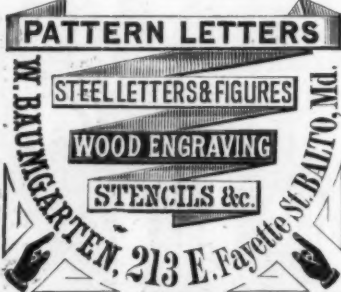
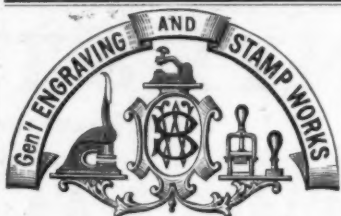
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MIDDLESBOROUGH, KY.

For in the origin and development of the town the primary cardinal points why a town should be built exist here to a pre-eminent degree

Middlesborough occupies a POSITION second to none in the United States as regard coal and iron.

The Natural Resources are in such wonderful profusion and are so easy of development that it is only a question of time when a great Industrial and Manufacturing city will surely be built to consume the great Mineral and Timber Wealth which nature has deposited here with such a prodigal hand.

There are already built:

Two Large Iron Furnaces,
An Immense Steel Plant,
A Mammoth Tannery (in operation),
A Brewery, Cold-Storage and Ice Manufacturing Plant,

A Belt Railroad, 23 miles long,
Water Works, Electric-Light Plant,
Foundries, Saw Mills, Planing Mills,
Furniture and Bent Wood Factories,
Telephone and Electric Street Car Systems

And other smaller plants of various descriptions.

THE MIDDLESBOROUGH TOWN LANDS COMPANY,

MIDDLESBOROUGH, KY.

Address all communications to the Manager.

TO THOSE LOOKING FOR _____ • MANUFACTURING SITES: •

The most desirable locations for the manufacture of wagons, stoves, horse and mule shoes, boiler plate, sheet iron, agricultural implements, furniture, or for foundries, machine shops, rolling mills, muck bar mills, nail works, glass works, cotton or woolen mills, pipe foundries, wrought iron pipe works, tanneries, or other manufacturing establishments, are to be found in Virginia, along the line of the Norfolk & Western Railroad, from Norfolk, Va., or Hagerstown, Md., to Bristol, Tenn., and upon its Clinch Valley, Cripple Creek and Ohio Extensions.

Hardwood in every variety; pig iron from the furnaces at Lynchburg (two), Roanoke (three), Pulaski (one in operation and one under construction), Ivanhoe (one), Radford (one now under construction), Salem (one), Graham (one), Max Meadows (one), Bristol (one), Shenandoah (one), Buena Vista (one); bar iron from the rolling mills at Richmond, Shenandoah (now under construction), Lynchburg (two) and Roanoke (two); muck bar from the rolling mill at Richlands; coke and semi-bituminous coal from the Pocahontas coal and coke field; superior gas coals from mines on the Clinch Valley Extension; splint, cannel and gas coals from mines on the Kenova Division (Ohio Extension); glass sand near Tazewell and Buena Vista; cotton from the markets of the Southern States, and wool from all the Western and Southwestern States and Territories, at advantageous freight rates.

Favorable freight rates made upon raw materials to all factories established upon its line, as well as to points in the United States and Territories, upon the manufactured articles.

Those seeking new fields for manufacturing establishments should not fail to investigate the wonderful development of iron, coal and coke industries that has been made within the past five years along the line of the Norfolk & Western Railroad, and the advantages offered by the States of Virginia and West Virginia in the supply of raw materials, by the Norfolk & Western Railroad Company in the matter of freight facilities and rates upon raw materials, and reaching home, far-distant and foreign markets, and by the cities and towns along its line in the way of advantageous sites at moderate cost. Many of the cities and towns exempt manufacturing establishments from taxation for a series of years.

For further information as to freight rates and sources of supply of raw materials, maps, pamphlets, etc., apply to

TRAFFIC DEPARTMENT,
NORFOLK & WESTERN RAILROAD,
ROANOKE, VIRGINIA.

—: ALL EYES ARE UPON :—

NEWPORT NEWS.

Unequalled Natural Advantages and Unlimited Capital Combined for
the Upbuilding of a Great Seaport City.

THE NEWPORT NEWS COMPANY,

Having acquired a large body of land—the
best in the entire Newport News section—and
having platted the same, now offers for sale at
moderate prices and on easy terms

Choice Villa Sites Building Lots,

Which will be made readily accessible by the
completion of the electric railway between
Newport News, Hampton and Old Point.

This property is situated on a plateau
looking out upon Hampton Roads, one of the
finest harbors in the world.

It is only a few minutes' ride from the
business center of Newport News, whose won-
derful and substantial growth is attracting
world-wide attention.

BUY LOTS AT FIRST PRICES.

PRICE-LIST FURNISHED ON APPLICATION.

L. P. ROUTT, - - General Agent, - - Richmond, Va.

NO MACEDONIAN CRY

Goes up from WINSTON-
SALEM, North Carolina.

She says, instead,

"Come Over and Help Yourselves!"

Surrounding her, and to be had for \$5 to \$25 an acre, are a million acres of now untilled land which would yield in tobacco every year a net profit of \$50 to \$100 an acre. Where can you beat that? Ten thousand live planters could make ten thousand fat fortunes here in fifteen years.

Come South, Discouraged Farmer of the North,

whose sterile soil and bleak clime rob your homes of sunshine. Come to the land of blue skies and balmy zephyrs, where nature is bountiful and the earth generous.

New England has more money in savings banks than all the country besides, and yet in North Carolina thousands of acres of better land than all New England's are given over to weeds and woods. (And, by the way, there is enough power in North Carolina streams to turn all the mills in America).

Come South, Ambitious Farmer of the West,

Why remain where you have more failures than you have crops? Come where the soils will raise everything that can be raised anywhere, where total failures are unknown, where industry, frugality and intelligent labor do not go unrequited, where you don't have to burn corn for fuel, run chances of losing your lives in winter's blizzards nor blister and parch all summer unless the rainmaker happens to come along.

Now About the Town.

WINSTON-SALEM,

Has ONE FACTORY for Nearly Every ONE HUNDRED of Her
16,000 Population.

Pay Roll _____

of the factories alone, one million dollars a year, all cash.

This is the Basis _____

on which Winston-Salem is built, and yet the resources of the
surrounding country are only meagrely developed.

North Carolina _____

never has had a boom, and yet she is an epitome of every-
thing excellent in the way of soil, climate, minerals, timber
and water-power which the United States contains.

"The Next Big Development _____

in the South will be seen in North Carolina."—*Consensus of
Public Opinion.*

That Winston-Salem _____

is easily the most important manufacturing city in the State
no one pretends to question.

If You Want _____

to make a real estate investment or a business undertaking in
a live town you can do no better than come to Winston-Salem
right now.

As A LOCATION for Manufactures

Of Iron and Wood and for General Industrial and
Business Enterprises,

FRONT ROYAL, VA.

INVITES INVESTIGATION.

Its location, at the junction of the Norfolk & Western Railroad (Shenandoah Valley line) and the Richmond & Danville's branch, give it excellent transportation facilities. It is only a few hours' ride distant from Washington.

The Norfolk & Western's direct line to Washington will be built from Front Royal.

There is no Finer Agricultural Country in the World than the Famed Shenandoah Valley, in which Front Royal is Located.

A WIDE RIVER WITH SWIFT CURRENT FURNISHES WATER POWER
AND MAKES DRAINAGE PERFECT.

Front Royal is a Prosperous Town, with an Extensive Mercantile Business
and Many Manufacturing Enterprises in Operation and
Under Construction.

INVESTIGATION OF ITS ADVANTAGES IS INVITED BY THE

Front Royal--Riverton Improvement Company,

FRONT ROYAL, VIRGINIA.

The Winston Land & Improvement Company.

Charter granted by Act of Legislature, Session of 1887. Ratified March 4, 1887, Chapter 82.

Authorized Capital, - - \$1,000,000.

Present Capital Stock \$125,000. All Subscribed and Paid Up.

OFFICERS:

G. W. HINSHAW, President, of Hinshaw & Medearis, Wholesale Merchants; Vice-President People's National Bank, Winston, N. C.
DR. W. L. BROWN, Vice-President, of Brown Brothers, Tobacco Manufacturers, Winston, N. C.
W. F. TROGDON, Secretary and Treasurer, North Wilkesboro, N. C.

BOARD OF DIRECTORS:

GEO. W. HINSHAW, Winston, N. C.
MAJ. CHANNING M. BOLTON, Chief Engineer Richmond & Danville Railroad, Washington, D. C.
P. H. HANES, of P. H. Hanes & Co., Tobacco Manufacturers, Winston, N. C.
COL. J. M. WINSTEAD, Cashier Piedmont Bank, Greensboro, N. C., and President H. P. Scales Tobacco Co., Atlanta, Ga.
A. A. FINLEY, ESQ., Mayor of North Wilkesboro, N. C.

ATTORNEYS:

T. B. FINLEY, ESQ., North Wilkesboro, N. C.
HON. C. B. WATSON, Winston, N. C.
HON. J. C. BUXTON, President First National Bank, Winston, N. C.
HON. W. W. BARBER, Wilkesboro, N. C.

THE COMPANY OWNS THE NEW TOWNSITE OF

NORTH WILKESBORO,

NORTH CAROLINA,

Consisting of 1,036 acres, and also owns 4,100 acres of Mineral and Timber Lands in Wilkes County, which property is now being developed. Townsite purchased November 11, 1890. Property put on market at private sale and first lot sold May 12, 1891. North Wilkesboro chartered by the legislature March 4, 1891.

188 Lots sold at Public Auction, December 2, 1891, one fourth of which will be built on at once.

Over sixty buildings already on the townsite.

Already established, one large, handsome, well-furnished and well-kept Hotel; one Saw Mill, Planing Mill, Door and Sash Factory combined; two Saw and Planing Mills; two Brick-yards; one Tan-yard; one Newspaper, the "North Wilkesboro News." Charter was obtained from the last General Assembly for the Bank of North Wilkesboro; the capital stock, \$50,000, has been subscribed, and bank will open for business before March 1st, 1892; fourteen Stores and one large Livery Stable.

Ten miles of streets graded.

Manufacturing sites will be donated and stock subscribed to such legitimate enterprises as may be advantageously located here.

North Wilkesboro, 75 miles west of Winston-Salem, on the Northwestern North Carolina Railroad, is the most important trading point between Winston-Salem and Bristol,

Tenn., and is in the center of the great undeveloped mineral and timber district of Northwestern North Carolina, being by United States postal map, on an air line, 75 miles southeast of Bristol, Tenn., 45 miles east of Cranberry, N. C., 40 miles north of Statesville, 45 miles northeast of Hickory, 90 miles northeast of Asheville, 45 miles southwest of Mt. Airy, N. C., and 80 miles north of Norfolk & Western Railroad, in the Valley of the Yadkin, between the Brushy mountains on the South and Blue Ridge on the north. The best located, watered and drained town in North Carolina.

Her climate is of unsurpassed salubrity and healthfulness. Fresh water and mineral springs abound, and the 328 miles of water courses in Wilkes County furnish a water power of almost incalculable magnitude.

Home seekers, health seekers, and wood and iron manufacturers, will do well to investigate North Wilkesboro's advantages.

PLATS, PRICES AND ANY DESIRED INFORMATION PROMPTLY FURNISHED ON APPLICATION TO

W. F. TROGDON, Secretary and Treasurer,

NORTH WILKESBORO, N. C.

RUTHERFORDTON

NORTH CAROLINA,

IS NOT A "CORNFIELD TOWN," A "PAPER TOWN" NOR A
TOWN OF THE IMAGINATION.

It Is the County Seat of Rutherford County,

WHICH LIES AT THE BASE OF THE BLUE RIDGE MOUNTAINS.

Rutherford County

Has a population of 20,000; has undeveloped water-powers sufficient to run all the spindles of New England; has undeveloped mines of Gold and Iron; has 130,000 acres of virgin forests of Oak, Hickory, Yellow Poplar and Highland Pine; has over 200,000 acres of tillable Farming Lands, uncultivated, yet capable of raising anything (except the tropical fruits) that can be grown "on the green earth."

When all these resources

Have been developed—and they are right now attracting the attention of capitalists from all sections of the country—its county seat is **DESTINED TO BECOME A CITY!** Its growth has begun. Population 750 in 1890; 1,500 in 1891. "MORE NEW HOUSES THAN OLD ONES IN RUTHERFORDTON!"

J. MATHEWS, Secretary.

Real Estate Men

ATTENTION.

WE OFFER YOU

Splendid Opportunities for Investment.

RUTHERFORDTON

Acre Property

SUITABLE FOR

SUB-DIVISION,

ALSO

LOT PROPERTY IN BLOCKS

AT LOW PRICES.

The Property of the Cleghorn Co.

Surrounds the present Business and Residence portion of Rutherfordton on all sides and includes business property on Main Street.

REAL ESTATE MEN SEEKING A

PROFITABLE LOCATION IN A NEW FIELD

SHOULD CORRESPOND WITH

J. MATHEWS, Secretary,

RUTHERFORDTON, N. C.

NORFOLK, VA.

THE GREAT SOUTHERN SEAPORT.

Attention of manufacturers and others seeking investment or establishment in the South is called to the following facts:

Norfolk has the most magnificent natural harbor of the Atlantic Coast, having no bar to block its entrance, being within 25 miles of the ocean, sheltered from all vicissitudes of weather, always free from ice, with sufficient depth of water for the deepest draft vessels.

Hampton Roads, at the confluence of the James and Elizabeth rivers with the Chesapeake bay, is easy of access, navigable for vessels of any size or draft.

It has been designated by Congress as the rendezvous for the navies of the world in 1892-'93.

A 26-foot channel, well marked with buoys and light houses, leads to the wharves of Norfolk, and above the city to the Navy-yard.

Seven broad-gauge and two narrow-gauge railroads, controlling an aggregate of over 17,000 miles, put Norfolk in connection with all the points reached by railroads in this country, and two

The water supply is derived from large lakes of spring water seven miles distant, good not only for household use, but admirably adapted for manufacturing purposes, being absolutely free from all those substances that corrode boilers.

The climate, tempered by the proximity of the Gulf Stream, is mild. There is hardly ever ice or snow to interfere with out-door work or exercise.

The city is lighted with electric lights, and has as fine a fire and police department as any in the country.

All denominations are well represented in churches.

There are two good hospitals, one in charge of the Sisters of Charity, and the other under the Protestant organization of the city.

Educational advantages are excellent, there being a thorough system of public schools, together with numerous private seminaries for both sexes.

There are two good theatres, at which the best companies stop on their pilgrimages from the North to the South.

This is one of the largest pine lumber markets in the South; 350,000,000 feet were shipped in 1892.

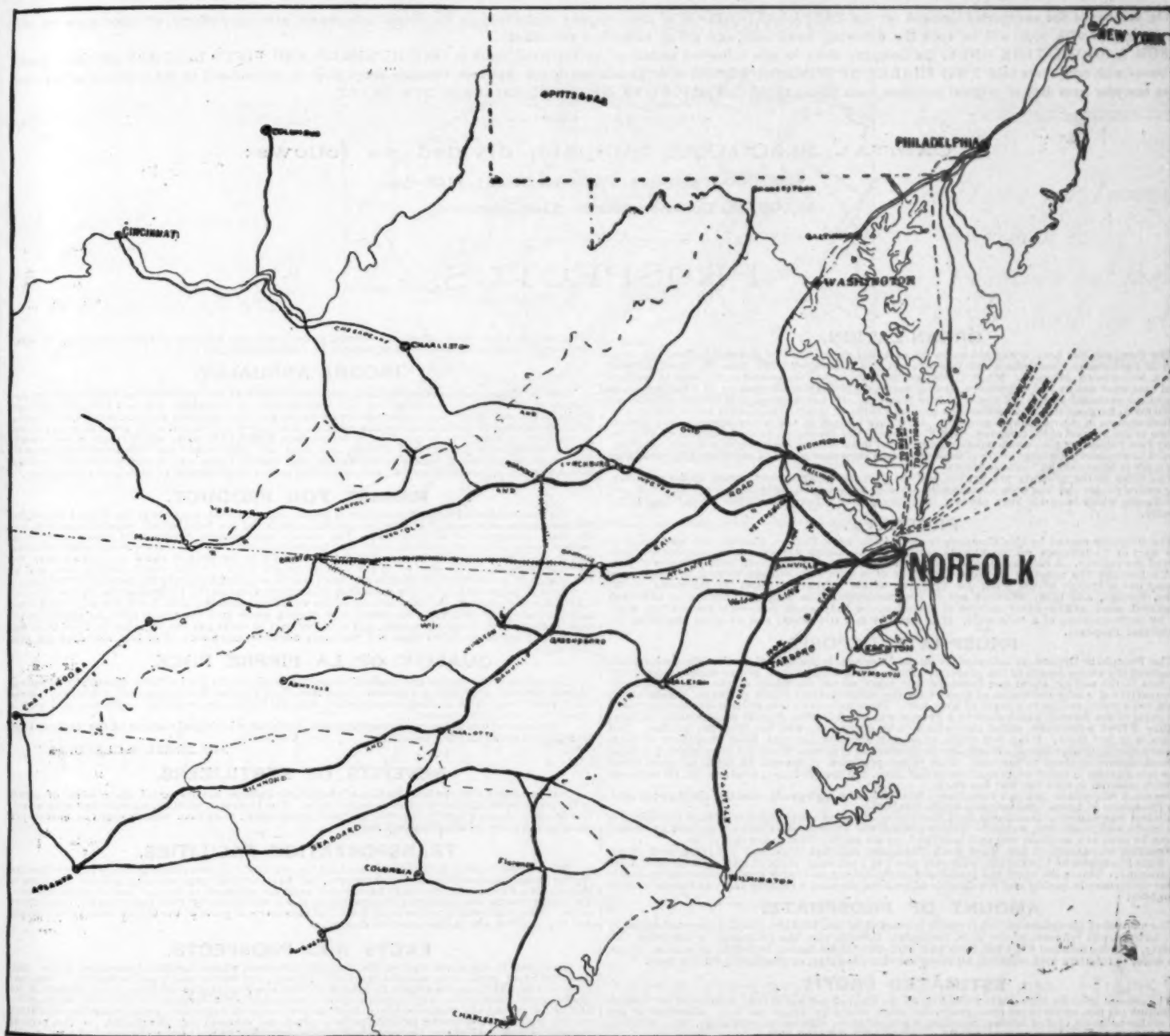
The best bituminous coal and coke are supplied by the C. & O. R. R. and N. & W. R. R.

Pig iron is delivered here by these two railroads.

Rolled iron and all of its products can be promptly and cheaply freighted by water to all of the leading seaports.

600,000 bales of cotton are annually marketed here, which makes this the most desirable point for the manufacture of cotton goods in the United States, superior to inland towns throughout the cotton belt, because a factory located in these is dependent on the local product marketed in three or four months, after which it has to draw from distant points or carry a sufficient stock for the year, or if the quality or grade in the locality is unsuitable, it is subjected to the expense of freight from distant points; but Norfolk being a large cotton market, not only furnishes an assortment of grades and quality, but enables the manufacturer to purchase his stock all the year.

It is superior to other seaports from its accessibility to New York, Boston and other markets, or such supplies as the manufacturer frequently needs on short notice, while its railroad lines to the interior distribute goods to all points.



canals connect with the Sounds through the Carolinas.

First-class steamship lines ply to Boston, Providence, New York, Philadelphia, Baltimore, Washington, Richmond and other points on the Coast and Sounds.

Norfolk is within 20 hours of Boston by rail and 40 by water.

12 hours of New York by rail and 21 by water.

10 hours of Philadelphia by rail and 18 by water.

8 hours of Baltimore by rail and 12 by water.

7 hours of Washington by rail and 12 by water.

2½ hours of Richmond by rail.

2½ hours of Cincinnati, and 34 hours of Chicago and St. Louis by rail.

A regular line of passenger and freight steamships ply to the Brazilian ports, and steamships, chartered mostly for the carriage of freight, ply to Liverpool and other European ports.

In 1885 the aggregate trade of Norfolk was placed at \$38,200,436, while five years later, in 1890, it had risen to \$65,011,656; in 1889 it increased to \$75,000,000, and in 1890 to \$100,000,000. The vessel tonnage of Norfolk in 1870 was 13,303 tons, cargoes valued at \$286,594; in 1880 it increased to 103,608 tons, valued at \$11,116,595; in 1887, 257,834 tons, valued at \$14,714,404; for the year 1890 the tonnage reached 582,846, valued at \$15,197,095.

It will be hard to find a parallel case in this country in two decades showing an increase of tonnage from 13,303 tons in 1870, valued at \$286,594, to 582,846 tons in 1890, valued at \$15,197,095.

The population of Norfolk, including Portsmouth, Berkley and other suburbs, is 70,000; the increase within the city limits has been 61 per cent. in the last ten years.

This increase, with the growth of business and enhancement of value in property of all kinds, is turning the attention of capitalists and investors to this point.

The City of Norfolk has a complete system of sewerage and is well paved.

The healthfulness of the climate, as exhibited by the death rate, is not surpassed by any city in the country, the percentage being in 1890 16.90 to the 1,000.

In addition to the manufacture of cotton and iron, there is at Norfolk opportunity for profitable manufacture of furniture and all articles made of wood, such as ash, oak, pine, poplar, cedar, cypress, juniper, gum, and for the manufacture of safes, stoves, hardware, sash, door and blinds, etc.

The cost of labor ranges from \$1 to \$1.50 per day for unskilled men, and \$2 to \$5 for skilled men; females 50 cents to 75 cents a day unskilled, and 75 cents to \$2 a day for skilled; boys 33 cents to \$1 per day; girls 25 cents to \$1.25 per day.

The above quotations are for white labor.

Unskilled negro labor can be employed at 80 cents to \$1 for men and 50 cents for women.

Norfolk has been exempt from those labor troubles and strikes which have characterized Northern manufacturing cities.

The surrounding country being the great vegetable-growing section of the seaboard, and the rivers and bays being filled with the finest fish and oysters, make living cheap and healthy. Although in banking facilities Norfolk is fairly well supplied, there being nine banks with an aggregate capital of about \$1,000,000 and aggregate deposits of about \$5,000,000, there is, however, a good opening for another bank.

Norfolk offers a field for the establishment of jobbing houses in dry goods, boots, shoes, hats, caps, notions, drugs, tinware and all other kinds, excepting wholesale groceries, in which she is well supplied.

The country lying to the southward west of Norfolk furnishes the markets to which goods from here are distributed in exchange for cotton, corn, wheat, peanuts and other crops.

The NORFOLK INDUSTRIAL DEVELOPMENT CO. has been organized for the purpose of furnishing information and assisting the establishment of manufacturing enterprises.

Free sites can be obtained on the railroad lines around the city, and reasonable subscriptions will be made to the stock of manufacturing enterprises, provided they are meritorious, but no proposition will be entertained from any but bona fide concerns, using good machinery and stocked on a business-like basis.

Capital invested in machinery is exempted from taxation for ten years, and will probably always continue so.

For further particulars, address

WALTER F. IRVINE,

SECRETARY NORFOLK INDUSTRIAL DEVELOPMENT CO.

OF INTEREST TO INVESTORS.

An Investment in **FLORIDA PHOSPHATE MINING**, Offering a **CONSERVATIVE INVESTMENT** Combined with an Unparalleled Opportunity for **PROFITS**.

THE LA PIERRE PHOSPHATE COMPANY,

of BOSTON, MASS., and TALLAHASSEE, FLA.

On account of the unexpected demand for the **PREFERRED STOCK** of this Company, occasioned by the liberal inducement previously offered, all sales made on and after November 28th, 1891, will be upon the following terms only, and not as heretofore advertised:

FOR A SHORT TIME ONLY, the Company offers for sale a limited amount of its Preferred Stock at **ONE HUNDRED AND FIFTY DOLLARS** per share, giving as a bonus with each share sold **TWO SHARES OF COMMON STOCK**, with the sole restriction that such Common Stock shall be surrendered to the Company at any time within one year from date of original purchase, upon tender by the Company of **ONE HUNDRED DOLLARS PER SHARE**.

CAPITAL \$1,500,000, full-paid, divided as follows:

\$500,000 8 per cent. Preferred Stock; \$100—par.

\$1,000,000 Common Stock; \$100—par.

PROSPECTUS.

ORGANIZATION.

The Company has been organized under the personal supervision of the well-known law firm, Balch & Rackemann, Counselors and Conveyancers, of Boston, and Mr. John W. Weed, of New York, a well-known Attorney. Mr. B. C. Mudge, the President of the company, is a man of unquestioned executive ability and experience, having successfully established systems of water works in many of the prominent cities and towns of New England. He has also recently refused a flattering offer to take charge of the construction of a proposed railroad in order to give his entire attention to the development of the company's property. He is now located at the mines where he will devote his time to the interest of the company. Mr. F. E. Owen, the Treasurer, formerly connected with the Boston Post Publishing Co., which position he resigned to accept the Treasurership of this company, is well-known among his large circle of business acquaintances as a man of strict integrity and large experience in financial and business affairs.

The titles to the property are perfect, and the property is absolutely owned by the company, being entirely clear and free from all encumbrance with the exception of \$300,000 7 per cent. ten year Gold Bonds, which have all been placed; the entire proceeds being devoted to the purchase of the property.

PROPERTY.

The property owned by this Company is situated in Leon County, Florida, two and one-half miles west of Tallahassee on the Florida Central & Peninsular Railway, three-quarters of a mile north of the railway. A railway in course of construction, the Gainesville & Tallahassee, will pass direct'y through the property if given the right of way. The Florida Central & Peninsular Railway has a branch which puts the property within seventeen miles of tidewater at St. Marks, Florida, and other railways are in contemplation. The property consists of sixteen hundred and sixty-nine acres of upland in one body, about one and three-quarters miles long by three-quarters of a mile wide. It is nearly all cleared, and in good condition for agricultural purposes.

PHOSPHATE DEPOSIT.

The Phosphate Deposit, as indicated by pits and borings, is one-half of a mile wide, and extends throughout the entire length of the property. There are now three open pits or shafts on the property, two in the middle, about one thousand feet apart, across the width of the deposit, and one three-quarters of a mile northwest of these, near the northwest end of the property. These shafts are six feet square, and go to a depth of sixty feet. There have been also at least fifty borings made in all parts of the deposit, which show in a general way the following deposit of phosphate of lime:

The First Stratum, called purple rock, is seven and one-half feet from the surface. This stratum is 17 feet thick. It is a low grade, averaging about 55 per cent. Bone Phosphate of Lime without washing or separation. It requires separation to eliminate the sand, thus making a high-grade phosphate of about 72 per cent. This is not regarded at present as being of great value. Below this stratum is found white sand seven feet thick, and then fire-clay, available for all purposes that such material is used for, four feet thick.

Second Stratum is a soft Phosphate 4 feet thick, of a high-grade, running about 73 per cent. Bone Phosphate of Lime. Immediately below this is the

Third Stratum of granulated Bone Phosphate, analyzing about 55 per cent. Bone Phosphate of Lime crude, and 70 per cent. washed. This is a wonderful deposit, being already ground by nature, and can be used as a fertilizer just as it is taken from the earth. Next below this is the

Fourth Stratum of fine Hard Rock Phosphate, 12½ feet thick, and analyzing over 75 per cent. Bone Phosphate of Lime crude, with only 55-100 of 1 per cent. oxide of iron, and 23-00 of 1 per cent. alumina. This is the finest and principal stratum, having, as further compensation for its depth, greater uniformity in quality and the absence of pockets, showing a reliable and continuous stratum throughout.

AMOUNT OF PHOSPHATE.

The amount of phosphate on this property is practically unlimited, having been estimated by Prof. Lawrence C. Johnson, of the U. S. Geological Survey, who has personally investigated this property, as being between 60,000,000 and 100,000,000 tons, including all grades. There is no water to interfere with working, all being above the fire-clay, or practically surface water.

ESTIMATED PROFIT.

The present price for high-grade phosphate on the English market is 11d., or 22 cents per unit or per centum per ton, or for 70 per cent. grade, the price would be \$15.40 per ton. Allowing 50 per cent. of this value for cost of mining, handling, transportation, insurance, brokerage, etc., which is liberal in the extreme, leaves a net profit of about \$7.70 per ton.

This does not include the granulated or ground bone phosphate stratum of the same surface dimensions, but eight feet thick; nor the upper stratum, which is 17 feet thick. The expense of mining the phosphate is certainly less than mining coal, as there is no blasting, or water to contend

with, and has never been estimated to exceed 50 cents per ton, and the practical working of other well-known companies shows this estimate to be conservative.

INCOME ANNUALLY.

With our three separate sets of hoisting machinery, each with its own boiler and appurtenances, and capable of lifting 3,000 pounds per trip, one hundred tons of phosphate in a very low estimated output daily for each shaft; in fact, two hundred tons per day per shaft may be considered fairly reasonable. Assuming, however, that 300 tons per diem are mined and sold at a net profit of \$7.50 per ton, produces an income of \$2,250 per diem, or for 300 days \$600,000 net, which leaves 8 per cent. on the \$500,000 preferred stock, and over 53 per cent. on the common stock. This is not, in any sense, excessive estimation, and can be borne out in fact by reference to other companies not as favorably located, nor possessing such a large amount of high-grade phosphate.

MARKET FOR PRODUCT.

The demand for high-grade phosphate is practically unlimited, not only in the United States, but throughout the continent of Europe, phosphoric acid being the basis of all vegetable growth, and the main constituent of all fertilizers. The world's consumption of phosphate, which must be an indispensable article of commerce until that probably distant day when the chemist shall manufacture in the laboratory what the agriculturist now grows in the field, is rated at 1,500,000 tons, and increases annually at the rate of 25 per cent. or 30 per cent. In five years 4,000,000 tons will be required, and in twelve years 12,000,000 or more will be required to supply the market for the season.

Since the abandonment of the Canadian fields there remains the product of the States of South Carolina and Florida as the chief sources of the world's supply, and with South Carolina rock averaging about 57 per cent. bone phosphate, and costing some \$3.00 per ton to mine, as against 70 per cent. to 80 per cent. bone phosphate, and a cost of only 50 cents per ton to mine in Florida, it will not be long before the latter State will maintain absolute supremacy, if, in fact, she does not hold it to-day.

QUALITY OF LA PIERRE ROCK.

In relation to the quality and grade of phosphate produced by the La Pierre Phosphate Company, Messrs. Stillwell & Gladding, chemists to the New York Produce Exchange, and, doubtless, among the highest authorities as phosphate chemists, state the following, over their signature, and after a careful analysis of our product:

"We have no hesitation in pronouncing this phosphate a high-grade article of the highest commercial and manufacturing excellence. Very truly,

STILLWELL & GLADDING."

BENEFITS OF FERTILIZERS.

It is estimated that the introduction of phosphatic manures has increased the product of cotton in the South from 4,000,000 to about 8,000,000 bales. The increased yield of an acre sowed with wheat, and properly dressed with fertilizers, has been phenomenal, more than doubling the bushels per acre, and in some instances many fold.

TRANSPORTATION FACILITIES.

The Florida Central & Peninsular Railway Co. are affording this company every facility they can for the cheap transportation of the phosphate, and have erected large store-houses and elevators at Fernandina, Florida, for the ready handling of same for shipment to foreign and domestic markets. Two other roads are now being constructed to reach this property, thus guaranteeing competitive rates. Direct shipments can be made from Tallahassee to all parts of the United States and Europe, and the facilities are all that could be desired.

FACTS AND PROSPECTS.

With such an enormous tract as this company possesses, situated within three miles of the capital of the State; within one mile of a trunk line railway, and with a spur track connection; with two other railways striving to compete for business; with a large quantity of high-grade phosphate for the foreign market, and a large amount of medium-grade for the American market; with every facility for mining at a remarkably low price; with no expensive pumping to contend with; with an enormous profit for the product, the demand for phosphates, in the present methods of high agriculture, increasing more rapidly than the supply; and with honest management, there would seem to be nothing wanted to ensure immediate and complete success, rendering the stock of the company not only very valuable, but commanding a premium for generations to come.

LA PIERRE PHOSPHATE COMPANY,

Incorporated under laws of West Virginia.

B. C. MUDGE, President.

F. E. OWEN, Secretary and Treasurer.

BOSTON OFFICE, 738 EXCHANGE BUILDING.

THE OLD COLONY TRUST COMPANY, of Boston, whose statement we append below, is Trustee for Bondholders and Transfer Agent for the Stockholders.

STATEMENT—AUGUST 1, 1891.

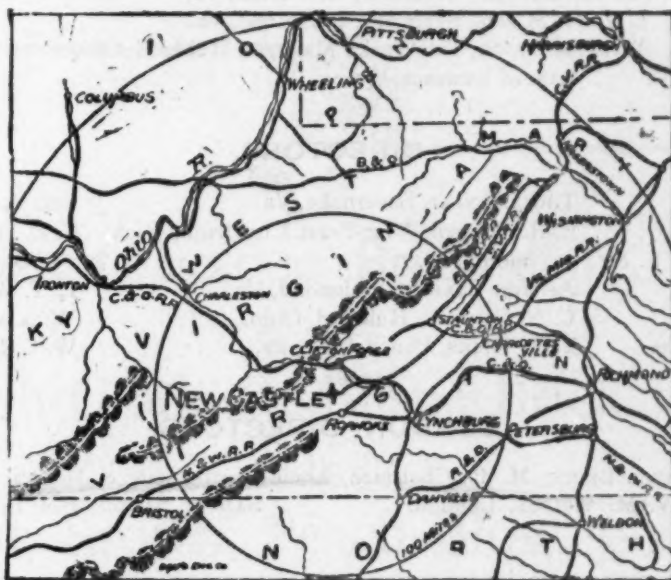
Assets.		Liabilities.	
Loans.....	\$3,529,399 47	Capital Stock.....	\$1,000,000 00
City and other Bonds at or under par.....	389 295 19	Surplus.....	500,000 00
Deposit Vaults.....	62,714 35	Undivided Profits and Interest.....	112,588 70
Expenses Paid.....	11,918 93	State Tax.....	11,000 00
Cash on hand.....	210,419 97	Deposits.....	3,542,576 52
Cash in Bank.....	962,417 31		
	<u>\$5,166,165 22</u>		<u>\$5,166,165 22</u>

NEW CASTLE, ^{Craig} ^{County,} VA.

• THE IRON BONANZA. •

Convenient to Fuel Supply.

*A City of Immense
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The Markets.

OFFICE MANUFACTURERS' RECORD,
BALTIMORE, December 30, 1891.

The last review of the iron trade for the year necessarily calls for some references and comparisons. The year in many respects was similar to last year, except that there was a falling off in anthracite iron. The industry has been fortunate in escaping a serious depression, when regard is had for the enormous increase in production. At the opening of the year the coke iron production was about 110,000 tons per week. A decline had already set in, due in a measure to the discouragements of the failures abroad precipitated by the Baring disaster. The output fell off week by week until May, when summer's full requirements were crowded in, and a jump was taken. A steady increase marked the summer and fall season until at this time the figures are not far from 145,000 tons. Last year the anthracite iron output ranged from 38,000 to 45,000 tons of iron per week, while this year the figures ranged from 31,000 to 36,000 tons. The present total output is now about 190,000 tons per week, which figures will be probably increased. Makers have faith in an increased demand, and estimate are made, but not on absolutely tangible grounds, that the consumption for 1892 will reach 11,000,000 tons. The steel-rail arrangements are the uncertain factors. If considerable new building is done crude iron will probably rule higher. There will certainly be increased activity in steel and iron of all kinds, but notwithstanding this buyers and consumers are all pursuing a halting policy—waiting for something of a positive and assuring character to turn up.

Steel rails continue at \$30. Muck bars are low and mills are not crowded. The bar-mill demand is also likely to improve, but just at present there is very little doing. The ship-builders will place large orders in January, as also will the car-builders. Rumors have been afloat for some days of possible large transactions in rails, plates and structural material, which will be wanted by large enterprises. The opinion is by no means weakening that there will be a general improvement in prices during the early months of the year, but this opinion is by no means a safe one to act upon. Buyers are not rushing into market at all. A great deal of rolling-mill and steel-mill capacity is being added—possibly, in the aggregate, a larger amount than has ever been under projection or construction at any time. New ship and boat-yards, new car and locomotive works, to say nothing of a great number of machine shops and machinery manufacturing establishments, are to be erected this year, or at least started. Iron and steel-making is taking a fresh start on the Pacific coast. There is but little doubt now that the railway systems of the country will depart from their extremely economic policy and make improvements and extensions quite freely. A conservative course has been pursued so far. The country is waiting for the outcome of the immense crops. Over-production is being guarded against, and while there is always a possibility of it, the probabilities are that the expansion contemplated in all industrial directions will be within safe limits.

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Reached only via the Iron Mountain Route. Pullman Buffet Sleeping Cars through from St. Louis to Hot Springs without change. Elegant Hotels; Sublime Scenery; Delightful Climate; Healing Hot Springs. Round-trip tickets on sale throughout the year from all coupon points in the United States and Canada. For descriptive and illustrated pamphlets write company's agents, or H. C. Townsend, Gen. Passenger Agent, St. Louis.

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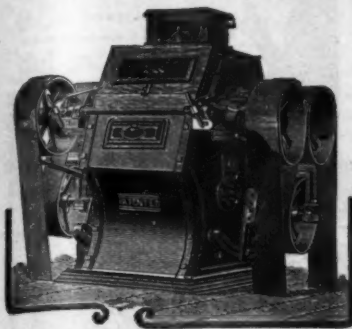
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DEMAND AND SUPPLY.

Another Big Sale of Eligible Lots at Newport News.

The Logic of Investment Working Itself Out Sooner than Expected. The Advance in Values.

[From Richmond Dispatch.]

NEWPORT NEWS, VA., Dec. 25 1891.

The logic of investment to which I have referred in previous letters from this place has begun to work itself out sooner than I expected, though not sooner than was consistent with business foresight and sagacity. I have alluded more than once to the fact that other clear-headed financiers, considering the conditions that exist at Newport News, could not fail to profit by the example of the Newport News Building Co., composed mostly of Richmond parties, which recently purchased 300 lots from the Newport News Co. The plat of the last-named company, as I have explained, is in the natural extension of the place, and the 300 lots were bought for the purpose of being built upon in order to meet partially the inevitable demand for houses occasioned by the rapid development of the place.

ANOTHER BIG DEAL.

Now it is learned that through one of their agents, Captain J. S. Lipscomb, of Durham, N. C., the Newport News Co. have made another big deal. They have sold to the North Carolina & Newport News Co. 178 lots in the same magnificent plat. This North Carolina company is composed largely of wealthy capitalists of Durham, N. C., and the syndicates mean business. They have made the first payment on the lots, and will also begin building operations at an early day.

STILL INADEQUATE.

Yet both of these syndicates, the Richmond one and the Durham one, may build to the utmost capacity of their holdings, and it is a safe prediction that there will still be a crying demand for houses. Every day there is accumulating evidence that the vast transatlantic fleet enterprise here, the ship-yard, the dry-docks, the increasing business of the railroad, and the minor industries is still further complicating the problem, "How shall we house the people?" and is still further accentuating the fact that there must be a rapid advance in values of real estate here.

The taking up of 478 lots of the Newport News Co. by two syndicates, in addition to the large number sold to individuals within the course of a few weeks, and that in a plat that the city is compelled to grow over—a plat in the line of the extension of all the city's improvements, such as lights, water, sewerage, street railways—confronts the investor with the simple but most important question of supply and demand. It does not take anything like supernatural acumen to see that every building put up by either of these syndi-

cates or individual purchasers must enhance the value of surrounding and contiguous property. Nor does it take supernatural acumen to appreciate that the sooner one invests, whether in one or more lots, either for building purposes or to hold for a higher figure, the greater will be his profits. If there was a certainty of increase, a safety of investment here before the North Carolina syndicate made their purchase, what must be said on that point now? It is rather a reflection on the intelligence of the average business man to ask.

Mobile's New Cereal Mill.

In a recent issue there appeared an item stating that Mr. C. W. Stanton, of Mobile, Ala., intended rebuilding his grist mill recently burned, which announcement gives no fair idea of the magnitude of this enterprise. 2,500 bushels of corn will be required each day to keep this "grist mill" going, and will be manufactured into different products, such as hominy, grits, pearl meal, nigger meal, cream meal, corn flour, etc. The equipment will be very complete, consisting of double roller mills, degerminators, grain and meal dryers, reels, cleaners and other special machinery required in a modern plant for the manufacture of fine corn goods. The contract for the erection of this plant has been awarded to Nordyke & Marmon Co., of Indianapolis, Ind., who are leaders in this branch of mill building, as is evidenced by the number and large capacity of these mills which they are building. Among those contracted and erected by them during the past year we mention the following, with the daily capacity in bushels of each: Wolfe Maize Mills, Chicago, Ill., 3,000 bushels; Kracke & Co., New Baden, Ill., 1,500 bushels; Smith & Giddings, Danville, Ill., 2,500 bushels; J. & S. Emison, Vincennes, Ind., 2,500 bushels; Emmert & Co., Greensburg, Ind., 1,200 bushels; Swope & Newsom, Courtland, Ind., 1,200 bushels; H. H. Hertche, Hamburg, Ia., 2,500 bushels; Sioux City Oat Meal Co., Sioux City, Ia., 1,200 bushels; Wm. Hopps & Co., Baltimore, Md., 1,200 bushels; T. R. Bell, Circleville, Ohio, 1,200 bushels; American Hominy Flake Co., Yellow Springs, Ohio, 1,200 bushels; Victor Mills Co., Morgantown, W. Va., 2,800 bushels; Shreveport Mill & Elevator Co., Shreveport, La., 2,800 bushels; Commercial Milling Co., Detroit, Mich., 1,200 bushels; Ewing Milling Co., Ewing, Ind., 1,200 bushels; Bishop & Co., Sheldon, Ill., 1,200 bushels; Miami Maize Co., Toledo, Ohio, 1,200 bushels; Liberty Mills, Nashville, Tenn., 2,500 bushels, in connection with flour mill of 1,500 barrels daily capacity recently completed; Molinos Del Feniz, Saitillo, Mexico, 1,000 bushels, in connection with flour mill of 150 barrels daily capacity. Nordyke & Marmon Co. have the machinery for Mr. Stanton's Mobile plant in the course of construction, and report that they will have the mill in operation to its full capacity before the new year is very old.

AT WINSTON-SALEM.

The Last Rail Laid on the Roanoke & Southern.

An Event of Much Importance to the North Carolina Twin Cities—The Wachovia Development Co.'s Sale.

[Special Cor. MANUFACTURERS' RECORD.]

NORTH CAROLINA HEADQUARTERS OF THE MANUFACTURERS' RECORD, WINSTON-SALEM, N. C., Dec. 26, 1891.

The most important recent event in this section is the completion of the Roanoke & Southern Railroad between Winston-Salem and Roanoke, Va. Of this railroad, which will have its headquarters in this city, the Twin City Sentinel, of recent date, has the following to say:

"Winston, the manufacturing city of North Carolina, and Roanoke, the manufacturing city of Virginia, are now near neighbors. Bands of steel unite the most progressive part of the Old North State with the most progressive part of the Old Dominion.

"The indications are now that President Fries will easily realize his hope to have trains running into Roanoke on regular schedule January 15th.

"The building of the Roanoke & Southern has been a marvel of celerity, low cost and work. Its finances have been handled with shrewdness and sound judgment. Its future management gives promise that it will be characterized by the same broad-gauge spirit of progress and development that has characterized it in the past."

Manager Maslin informs me that traffic arrangements have been made between the Cape Fear & Yadkin Valley Railroad people and the Norfolk & Western management by which this new road will give Winston-Salem a new North and South service, and there has just been established here an office for the sale of Baltimore & Ohio Railroad tickets from Winston-Salem to all points of the country.

Recently there have been elections for the purpose of extending aid to the Southern extension of the Roanoke & Southern Road, and in many instances the proposition to issue bonds carried. So it is the firm belief here that the long-cherished project of a new North and South line will soon be an established certainty. Winston-Salem would thus be an important point on a most important line—a line connecting with the Baltimore & Ohio Road by means of an extension from Lexington to Roanoke and Salem, Va., and through an extension of the Roanoke & Southern Road from this place to a junction with the Seaboard Air Line, probably at Monroe, N. C.

There is no possible question about the growth in importance of this already important business and manufacturing center, and all these railroad developments and contemplated extensions strengthen the popular faith in the fullness of our future.

The Wachovia Development Co.'s Sale.

Worthy of mention as an interesting event of the coming week, although it will have occurred before the next issue of the MANUFACTURERS' RECORD appears, will be the sale of the Wachovia Development Co.'s property on December 29. This company, organized by representative business men of the Twin Cities, has some very eligible property adjoining the splendidly developed holdings of the Winston-Salem Land & Investment Co., and has introduced some popular features which must contribute largely to make the coming sale a pronounced success. There will be a large portion of the 300 lots of the company offered for sale, and to purchasers a chance will be given to secure one of the five houses and lots which the company offers as a bonus. The lots will be sold on easy terms, and an insurance benefit is provided by which any purchaser's estate will have free benefit of unpaid balances if he should not live to make the deferred payments within the time specified by the terms of the sale. As the lots are within a short distance of the electric-car lines, with prospective advantages of water, electric lights and car service, a good sale is expected despite the hard times which seem to persistently hamper Southern operations during this fall season.

ALBERT PHENIX.

THE Page Belting Co., of Concord, N. H., with branches in New York, Boston, Chicago and San Francisco, report an increase in all departments. Among the large belts recently shipped is one each to Richmond and Madison, Me.; one to the Natick Electric Light Co., Natick, Mass. Acme link belts were shipped during the past month to the following plants: Chattanooga (Tenn.) Electric Railroad Co., Pottstown (Pa.) Light, Heat & Power Co., Shamokin (Pa.) Electric Street Railway Co., Edison Electric Illuminating Co., Easton, Pa.; People's Street Railway Co., Scranton, Pa.; Huntingdon (Pa.) Electric Light Co. Export orders have been shipped to Havana, Russia, Brazil and Carracas of Eureka dynamo belts. This is a double-leather belt, slotted. Among others shipped have been the following: Austin (Texas) Water, Light & Power Co., Forest Mill Co., Clearfield, Me.; Xenia (Ohio) Electric Light Co., Danbury & Bethel Gas & Electric Light Co., Danbury, Conn.; West End Street Car Co., San Antonio, Texas; Home Electric Light & Steam Heating Co., Tyrone, Pa.; Shamokin (Pa.) Street Railway Co., Johnstown (Pa.) Electric Light Co., Elmira (N. Y.) Woolen Mills, Elmira.

VALUABLE PROPERTIES of all descriptions for sale in the growing city of

WINSTON-SALEM, N. C.

5 miles Electric Street Railroad. 113 Factories. Population 1892, 4,194. Population 1900, 16,471. Tobacco Center. Railroad Center. Paved Streets. The Future Metropolis of the South.

P. G. HUMPHREY, Real Estate Agent.

Eastern Lumber Markets.

[Special Cor. MANUFACTURERS' RECORD.]

NEW YORK, December 29 1891.

More lumber is being delivered from the retail yards than usual to push on winter work out and indoors, but this outside work is likely to be shut down any day. The retailers have run down their moderate stocks, selling mostly for cash, and are therefore in good humor. The one thing which lumber dealers and building-material men hope will go through is the rapid-transit matter. As soon as a system is agreed upon and work begun real estate dealers will begin to sell tracts for new building operations. New York is too crowded, and thousands who live in apartment coops will take advantage of the opportunity to get a little more room in the suburbs when they can be shot into the business center in a few minutes. But the whole question is mixed up. Very little lumber has been arriving lately. The talk in trade circles is that white pine will be more easily handled during the coming season because of the heavier demand in the West. The full supply was undoubtedly used in the East this year, but buyers bought all year in a hand to mouth way lest they might lose something by a decline in prices. Our stocks are of moderate dimensions, and the export trade is keeping up.

Yellow pine is likely to be bought a little sooner than usual, and simply because buyers recognize the bare possibility of not being able to get it on as favorable terms late in the spring as in midwinter. This applies only to those who will want large quantities. The small buyers will wait until they need the stuff. The yellow pine business is in good shape. North Carolina pine is not particularly active, because nearly everybody stocked up a month or two ago. The hemlock people calculate on controlling hemlock better this year. A meeting is to be held at Bradford in a few days to see what degree of control can be exerted over the smaller concerns, who have always given so much trouble when combined action was attempted. The manufacturers of sash, doors and blinds in the West still hope to be able to agree upon some restrictive measures by which prices will be improved. Building operations will probably be heavier next year than this throughout the North, especially in the Northwest, where already a good many large orders have been given out for timber and joists. Large requirements will soon be presented for warehouses and factories, in which three-inch flooring stuff will be wanted. Architects are being furnished in several parts of the country with specimens of finished cypress in order to stimulate demand. Philadelphia lumber dealers are favoring a direct ship line to Georgia's ports to further the yellow pine interests. News from interior points show a quiet trade and fair stock. Along the Atlantic coast there is some activity, and a few desirable tracts of timber land have been picked up. The entire trade is watching for the first developments of the new year with more than ordinary interest.

The B. & O. Southwestern Limited.

On November 20 the Baltimore & Ohio Railroad placed in service on its Southwestern Limited Express train running from Baltimore and Washington to Cincinnati and St. Louis an entirely new equipment built expressly for this train by the famous Pullman Co. The new cars embrace all the features that have rendered the Royal Blue Line trains so universally popular, and include the safety vestibule, steam heat, Pintsch gas-light, the anti-telescoping device and convenient toilet accessories for men and women. The train leaves Baltimore daily at 2 30 P. M., arrives Cincinnati next morning at 7.45, and St. Louis at 6.25 next evening. The entire train runs through from Baltimore to Cincinnati, and the sleeping-cars run through to St. Louis.

THOS. J. SHRYOCK & CO.

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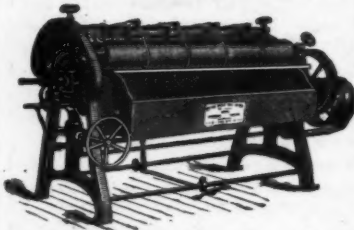
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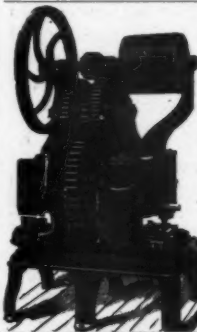
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Punches
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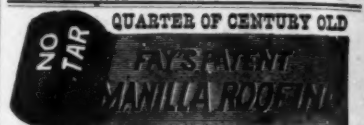
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Our Asbestos Roofing is now in use upon Factor-
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THE BELDEN MACHINE CO.

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Spinning Fine Yarns in the South.

The ability of the South to manufacture fine cotton goods is a subject upon which the MANUFACTURERS' RECORD has had a good deal to say in the past. New England people generally have claimed that the South could not do it, but one New Englander writing from practical experience says that the South can do it, and in a letter to Wade's Fibre & Fabric, of Boston, says:

"There was an article in your paper a short time ago headed, 'Can Fine Yarn Be Produced in the South as Well as in the New England States?' Let us go back less than 30 years, when the same idea prevailed with the New England cotton-mill owners, that fine yarn could not be produced in this country, as the humidity was too low and the temperature was too changeable. Therefore, England was declared to be the only land where fine yarn could be produced. To be sure England has great advantage in higher humidity and more even temperature, skilled labor and more perfected machinery, but at the present time in these New England States we have more skilled help and perfected machinery in many of our mills making fine yarn to a certain extent. In my own experience for the last 20 years I have produced roving for 100s to 250s, and many years for 160s to 180s. Therefore the South is situated as we were, and lives in the same doubt that prevailed here 30 years ago in the New England States. By my own experience and observation in the South I find that fine yarn can be produced as well as in New England, and better in some localities. The humidity is higher and the temperature does not change so much in a given time as here, and in the whole year round it will be found more desirable than what it is in the New England States. I have had experience in carding and spinning (ring) 100s in the middle of the South and 80s at the extreme South. Although I had perfected machinery and skilled help, and I found some advantages there that we do not get here, therefore it is not possible that only coarse yarn and coarse goods can be produced in the South, and all fine in the North. The South have a beginning at the present time far better than New England had 30 years ago to manufacture fine yarn and goods at less expense. Many say they need skilled help, but they would soon have it if they made a beginning. In my 20 years' experience, 80 per cent. of the help I learned never saw the inside of a mill, and they made the best help—easier to learn them than help from coarse mills. The most important and practical part in making fine work is in the carding department. Whatever condition it leaves that department, so it will remain to the finish for the market to a certain extent. The spinning department, with a proper system and good, perfect roving, will give good results. It will be no experiment if the proper course is taken by any one that wants to manufacture fine yarn. In the first place engage a practical and experienced man for each department that can show a record in having experience, and can say what is needed with second hands of experience. All other help could be selected in the vicinity of the mill. In this way they would in a short time have skilled help, and ever after that time mills on fine work would be found throughout the South. I can say, without any doubts, the time will come when there will be many mills making fine yarns and goods in the South, and as successful as in these New England States. There must be a beginning, and there will be less expense and trouble than what the New

England mills had to contend with. If they take the proper course, mills located near rivers or large bodies of fresh water will be more successful at once. Long-staple cotton of various lengths nearby their places of business indicate the advantage that no New England mills have; therefore, I see no doubts, but success and prosperity and good dividends to all mills on fine yarn and goods in the South."

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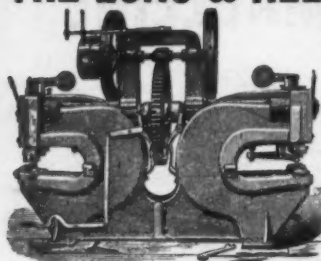
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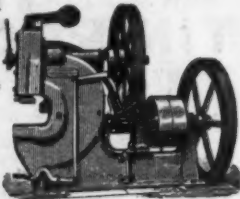
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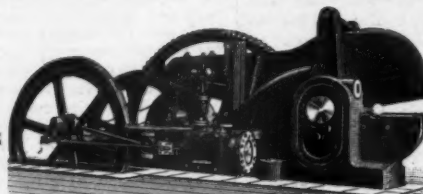
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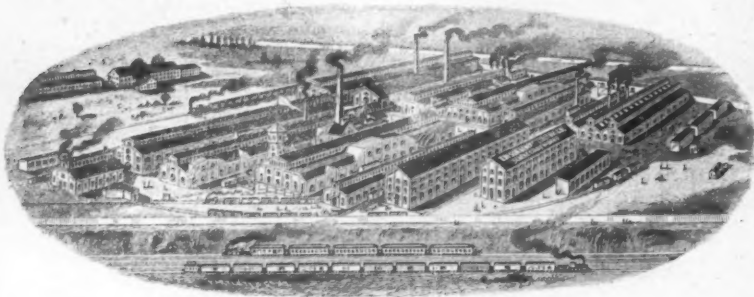
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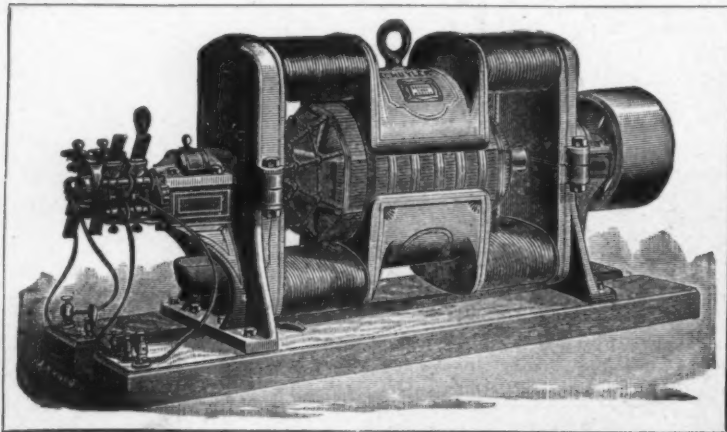
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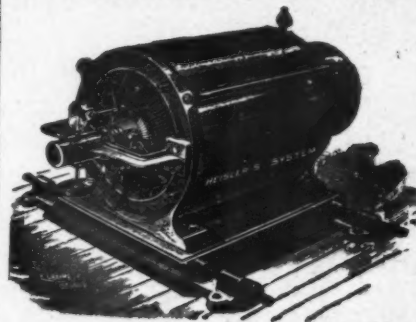


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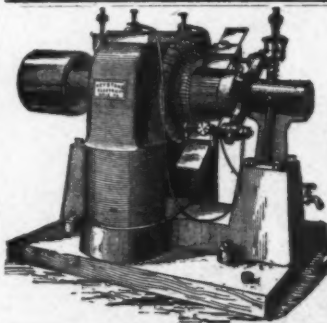
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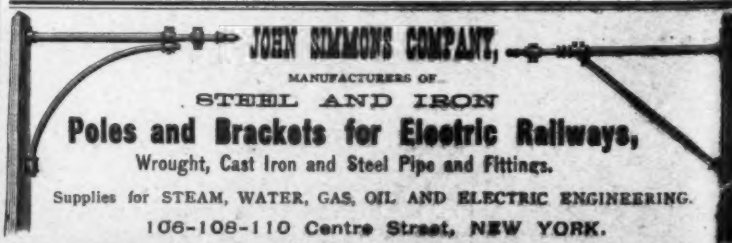
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8	in.	Speed	Lathe,	foot motion.
20	in.	Drill	Press.	
24	in.	Drill	Press.	
75	horse-power	water tube boiler,	second hand.	
25		vertical		
18		locomotive		
12		vertical		
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10				
20				
20				
14				
14	x 16	Automatic Engine,	100 horse-power.	New.
12	x 14			
8	x 11			
6	x 10			
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		inary	speed,	second hand.
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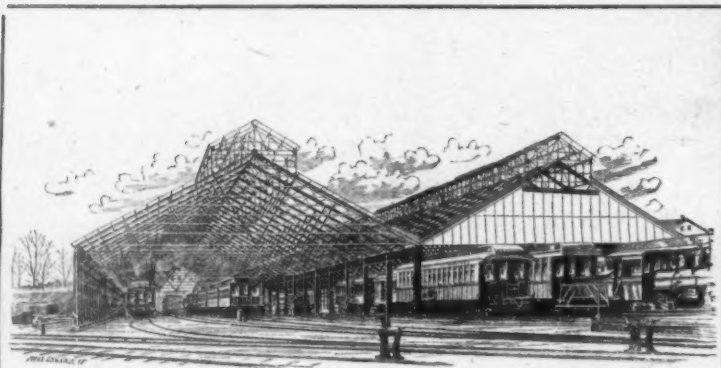
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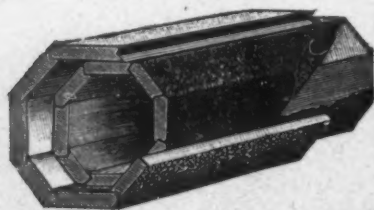
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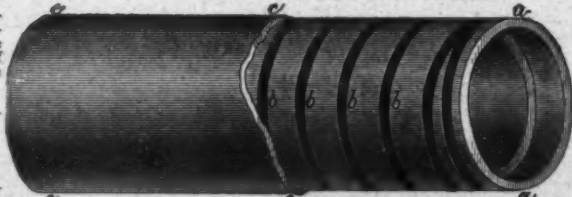
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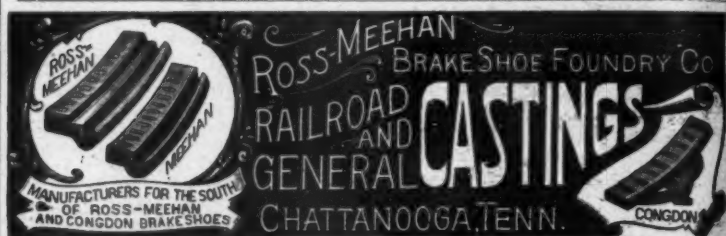
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